

AMERICAN ARTISAN and Hardware Record

Vol. 82. No. 24.

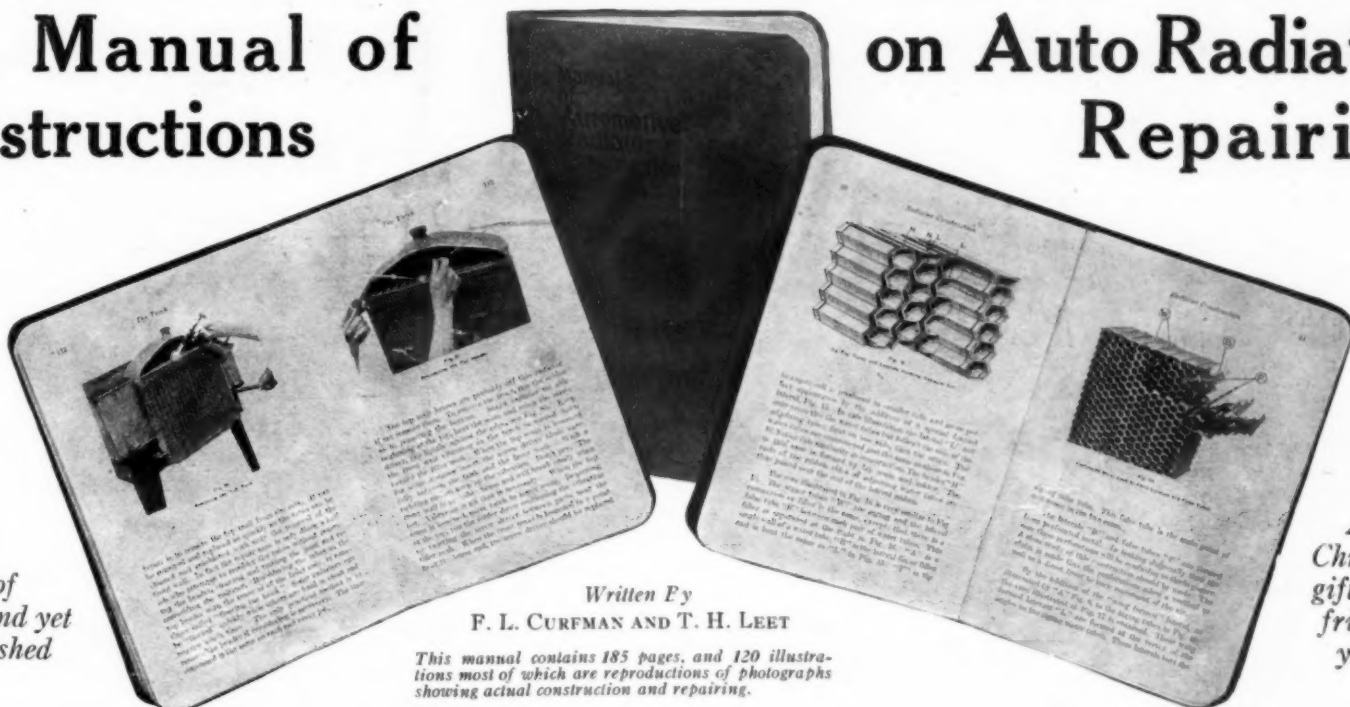
620 SOUTH MICHIGAN AVENUE, CHICAGO, DECEMBER 10, 1921.

\$2.00 Per Year.

A Manual of Instructions

on Auto Radiator Repairing

The
only
book of
its kind yet
published



Written By

F. L. CURFMAN AND T. H. LEET

This manual contains 185 pages, and 120 illustrations most of which are reproductions of photographs showing actual construction and repairing.

A good
Christmas
gift for a
friend or
yourself

The book thousands are waiting for—just off the press

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YOU sheet metal men who have taken hold of the business of Repairing Automobile Radiators will know at once how much this book will mean to the trade. A reading of the Table of Contents will give you an idea of how thoroughly this book covers the subject.

Here in this manual we have set forth in a condensed manner some four to five thousand answers to questions which radiator repair men have met in this work and which have been answered personally by F. L. Curfman. Notes have been kept for over three years as a basis for the writing of this book. It is instructive, thoroughly practical and interesting from the first to the last line—the illustrations show and the text explains so that you can understand every step taken.

T. H. Leet, one of the authors, is a man of wide experience in this work, having been foreman of the repair department of the F. L. Curfman Mfg. Co. for four years.

All the different types of radiator construction are considered in detail—the book actually and practically shows you how to repair automobile radiators. It is a manual that contains logical facts and instructions which will be of service to you.

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F. L. CURFMAN MFG. CO.

Manufacturers and Jobbers of Auto Radiator
Repairing Supplies and Tools

MARYVILLE, MISSOURI

Published weekly, entered as Second-Class Matter June 25, 1885 at the Post Office at Chicago, Illinois, under Act of March 3rd, 1879

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 39 to 41

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Look over the complete Dangler line *now*—there's a style and size for every requirement.

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DANGLER

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Place your orders early—stocks are low everywhere and you want to have your Dangler Oil Stoves on hand when the big demand comes.

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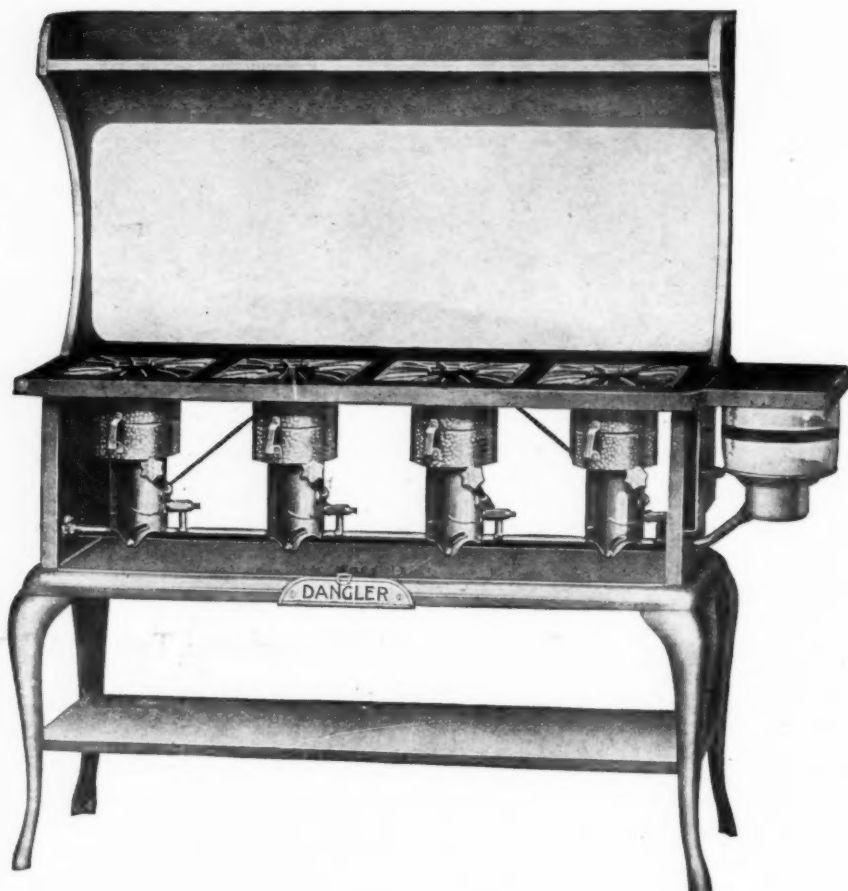
Don't wait—Dangler dealers are buying now—they are preparing for big business and our attractive prices will show you they are right.

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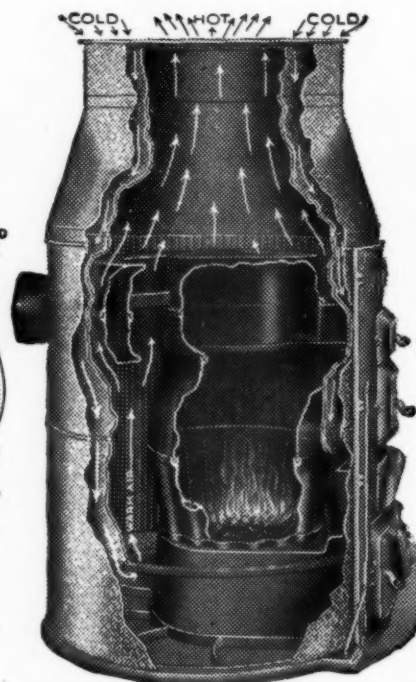
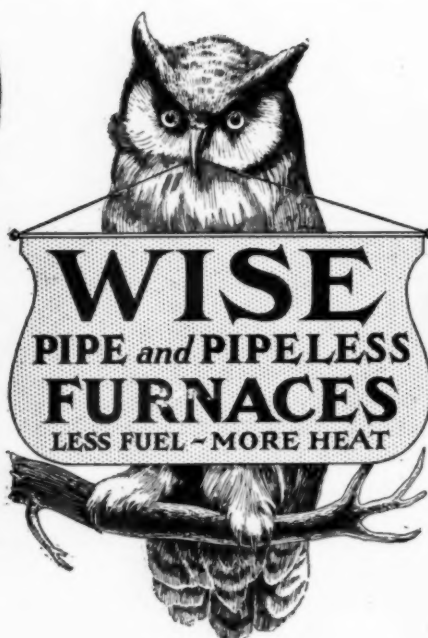
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Div.—American Stove Co.

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Copyright, 1921, by the Estate of Daniel Stern

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CHICAGO, DECEMBER 10, 1921.

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REPLACEMENT VALUE BEST BASIS FOR NEW SELLING PRICES

In a copyrighted "business editorial," published in the December fourth issues of Chicago newspapers, the statement is made by Alexander H. Revell & Company, one of the most prominent retail distributors of household equipment and furniture, that fifteen months ago this organization started a re-adjustment sale, and that the original plan has been adhered to ever since, re-adjustment being made by reduction of selling prices in accordance with replacement values.

This is the policy which American Artisan and Hardware Record has advocated ever since the market changed from a sellers' paradise to a hunt for buyers.

We have cited many instances of hardware merchants who have adopted a similar policy—

And in each case the result has been the same:

A large enough increase in sales to reduce the overhead to a point where there was a fair net profit on the year's total business.

However, there are still some hardware dealers who have failed to see the signs of times, or if they have seen them, have failed to apply their meaning to their own business, as witnessed by the writer at a visit to a store where a well known line of kitchen ranges was on display.

Several weeks before this visit the manufacturers of these ranges had announced new prices which showed an average reduction of about 15 per cent.

The old price tags were still on the ranges in the store and on the basis of the new costs these selling prices would show a gross profit

of more than one hundred per cent on cost!

When the proprietor was asked when he would make a reduction, he replied that he was planning a "sale" to take place in about three weeks, and that after that he would probably set a new "regular" price on them.

This dealer was retarding the movement back to "normalcy," and by the stand he took was giving good reasons to those who claim that the principal cause for the high cost of living was to be found in the retailers' unwillingness to adjust their prices to new conditions.

We know that, generally speaking, hardware merchants are following market quotations closely and that they are selling their merchandise very largely on the basis of replacement values, but as indicated, there are some hardware men who are not doing so, and every one of these stand in the way—they are hindering the return to normally prosperous business conditions.

And by their stand, they are causing non-employment to last longer; they are keeping men out of work; they are limiting production; they are inducing men and women who are able to buy now to hold off on purchasing many articles which the latter would really like to buy now, but which they will not buy because "prices are too high."

And there is this point which may well be considered by the "hold back" gentry:

In the long run, it will pay out better to swim with the current than to buck it.

Let this be your motto for 1922.

"We sell on the basis of replacement values."

Random Notes and Sketches

By Sidney Arnold

An interesting letter of reminiscence came to me this week from O. B. James, hardware and implement dealer, Richland Center, Wisconsin. Here it is:

"Your notice of the recent death of Henry M. Gay recalls an interesting incident connected with him forty-eight years ago.

"Mr. Gay traveled at that time for the Biddle Hardware Company and made this town regularly. That was before we had a railroad and it was a day's drive from Lone Rock. He would come here one day and go back the next.

"D. O. Chandler ran a hardware line at that time and he thought that Henry M. Gay was the only man worth mentioning.

"About two o'clock in the morning of one of Mr. Gay's visits, he was awakened by Mr. Chandler who informed him of the parentage of a boy. Gay rubbed his eyes and mumbled, 'Name him Henry Gay and for land's sake let me sleep.'

"Henry Gay Chandler, forty-eight years old, is now in the electrical business, and proudly exhibits many of the birthday remembrances bestowed upon him by Henry Gay."

* * *

C. A. McFarland, the "Homaker Man," who represents the Williamson Heater Company, Cincinnati, Ohio, out in the territory where the air is thin and cold, sends me the following story for the truth of which he absolutely vouches, and I have no reason to doubt his word:

A friend of mine, by name of Warner, traveling in the State of Missouri, had about twenty minutes to spare after calling on his trade before his train left the little town.

The next town he was to stop at, was about a good hour's ride and as it was nearing lunch time, he thought he would drop into the little restaurant and get a bite.

He ordered a ham sandwich and a plate of beans. The man sitting next to him had finished a big meal, and he asked the price. The owner said: "Forty cents."

My friend finished his beans and sandwich and asked the price. The owner said: "Forty cents." Warner thought that was too much for a sandwich and beans and asked him how he could afford to put up a big meal like the other gentlemen had for 40 cents, and still have the "nerve" to charge 40 cents for a plate of beans and a sandwich. The owner said: "That is our price," and my friend paid it.

But when he was seated on the train he thought it over again and it peeved him, so much that he made up his mind on arrival at his destination he would get even with the restaurant man, so he sent the following wire, collect: "I still think you charged me too much for the beans."

* * *

When the millenium arrives, says R. E. Pauley, Secretary Iowa Sheet Metal Contractors' Association, Mason City, Iowa, it will be a common experience to hear people talk in this fashion:

Traveling Salesman: "I must be very economical; the house is paying all my expenses."

Hubby: "No, boys, can't play poker tonight. My wife's out of town."

At the Woman's Club: "But, dearie, we mustn't talk about her behind her back."

* * *

There is a degree of pride and self-complacency in every human being and the wise advertiser never overlooks the fact, says T. W. Jenkins, publicity director, American Rolling Mill Company, Middletown, Ohio. He gives the subjoined example:

So many men to whom the New York East Side missionary had given money had expressed a preference for a certain lodging house that he wondered what constituted its particular attraction.

"It makes us feel self-respecting," said the men, when questioned.

So far as the mission worker could see, it was the typical cheap lodging house, whose inducements to self-respect were not discernible to the ordinary eye. So he interviewed the manager.

"That's easy," replied the latter and pointed to a sign above the desk:

"Gentlemen Are Requested to Leave Their Valuables with the Clerk."

* * *

The grateful cooperation of the children of the rising generation is expected to prove quite a factor in the work of the Trade Development Committee of the National Association of Sheet Metal Contractors.

Paul F. Brandstedt of Washington, D. C., chairman of that committee, explains the reason for the cooperation with this brief dialogue:

Mrs. Jensen—"Why are the children so much worse than they used to be?"

Mrs. Bensen—"I attribute it to improved ideas in building."

Mrs. Jensen—"How so?"

Mrs. Bensen—"Shingles are so scarce, and you can't spank a boy with a tin roof."

* * *

To Frank I. Eynatten of Peoria, Secretary Traveling Salesmen's Auxiliary to the Illinois Sheet Metal Contractors' Association, I owe thanks for this amusing tale:

The famous musician was bowing to the select audience in his hostess' newly acquired palatial home when she came rustling up to him with the inquiry:

"What was that lovely selection you played just now?"

"That was an improvisation, madam," he replied.

"Oh, yes," she murmured: "I remember it now. It's an old favorite of mine, but the name of it slipped my mind for a moment."

* * *

The Brother of Light.

He never keeps a catalog of everlasting woes;
He says good morning to the world and whistles as he goes:
He hides the thorns of life away and only wears the rose—
Brother to the two high hills of Morning.
The pleasant pathways know him—fields where the daisies throng;
The winds make music for him as they sweep the world along.
And when that music's silent in the heart he hears a song,
Brother to the Light that makes the Morning!

—Frank L. Stanton.

Last Days Before Christmas Can Produce Extra Profits by Little Effort

Every Hardware Store Contains Many Articles Which Are Especially Suitable for Christmas Gifts

The next two weeks may mean a big difference in your balance sheet for 1921. There are some hardware dealers who have fallen into the habit of thinking that the month of December is a poor month for business, because of their mistaken notion that people will spend money only for "frivolous things."

Then there are the hardware merchants—those who guide the thoughts of their buyers toward their lines of useful articles. They have found by experience that December is one of the best months for sales and profits in the entire year.

They are prepared to offer Friend Husband a well selected line of fancy articles, such as percolators, both plain and electric; fine glassware, electric toasters and grills; an electric washing machine; a vacuum cleaner, nice looking and long lasting aluminum cooking utensils, etc., from

which he may choose for the "lady of the house."

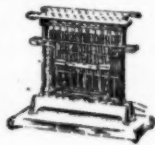
For the boys there are skates, footballs, coasters, sleds, pocket knives, tool chests, etc.

For the girls they have beautiful sets of toilet articles, or scissor sets; writing desk outfits, etc.

For the "head of the house" they show razors, both strop and safeties; guns; fishing rods and tackle, etc.

And, of course, all of these various articles are effectively displayed in show cases and on tables or counters. The show windows have been attractively decorated in seasonable colors and tempting displays arranged, all with small tickets giving the price.

The newspaper man has been called in and with his assistance, good-sized advertisements have been prepared, so as to guide the thoughts of everyone in



Practical Gifts

Electric Toasters, Stoves and Grills. Prices \$4.00 to \$12.50.

Casseroles of China and Pyrex glassware, with and without frames. Prices 80c to \$9.00.



WAGNER
CAST
ALUMINUM
WARE
"From Generation to Generation"

Wagner and Wear-Ever Aluminum Cooking Utensils make most acceptable Christmas gifts.

Ben Popken
HARDWARE & HOUSE FURNISHINGS

1034 Lake St.

Phone Oak Park 142

Two Column Advertisement of Holiday Goods, Prepared by Ben Popken, Oak Park, Illinois.

The "Christmas Store" Is Now Ready for You

Our customers say that this store has made possible in a larger way Holiday Shopping in Oak Park, where a large selection of quality merchandise is assured at lower than Chicago prices. For our part, we have never sold such high quality merchandise on as low a margin as we are now doing—this accounts for the fact that this is the

best time to shop in Oak Park—DO IT EARLY—DO IT HERE

SHOPPING ALL ON FIRST FLOOR—NO WAITING FOR ELEVATORS—NO ELEVATOR JAMS—NO CROWDED CARS GOING TO THE LOOP—GET BETTER SERVICE BY SHOPPING IN THE MORNING

Our Special Holiday Offer—Any Electric Washer, Ironer or Vacuum Cleaner, only \$35.00 first payment, then a small payment each month.



A THOR for Christmas

Get "Mother's" Thor Electric Washing machine. Only \$100.00



The Gift she will appreciate. Only \$5 places a wonderful Simplex Ironer in your home. Order now for Xmas.

The small payments of \$10 monthly can be provided from the actual savings in help lines, time, fuel, etc. See the Simplex Ironer demonstrated. See how simple and safe it is and how easy it operates.

42-inch Simplex Ironer, now only \$130, including FREE bench (worth \$25).
46-inch, \$160, including FREE bench.

Give her a Hoover for Christmas
Give her a Hoover—your electric rug sweeper and electric vacuum cleaner combined—giving expression of loving consideration.
Only \$55.00 Down
\$14.40 a Week

"Wagner" Cast Aluminum. "From Generation to Generation" the ideal Christmas gift for mother.



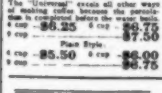
No. 1—Wagner Cast Aluminum TEA KETTLES. \$3.55
Very special at \$3.00
Packed in Keweenaw.



WAGNER CAST ALUMINUM WAFFLE IRON
\$3.00
In case iron, special at \$2.75



FOLDING SKILLET OMELETTE
\$1.45
In case iron, special at \$1.25

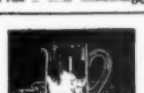


UNIVERSAL COPPER PERCOLATOR
The "Universal" even all other ways of making coffee. Makes the perfect cup in 10 minutes. See the new model. 4 cup. \$7.50
5 cup. \$8.50
6 cup. \$9.50

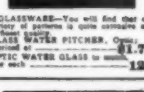
Pyrex were the most popular gift this year.



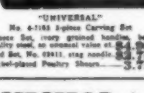
There are 26 new designs in Pyrex. When you see display, all guaranteed not to break. Pyrex Casseroles, 1 1/2 qt., regular, only \$3.00
2 qt., \$3.50
3 qt., \$4.00
4 qt., \$4.50
5 qt., \$5.00
6 qt., \$5.50
8 qt., \$6.50
10 qt., \$7.50



GLASSWARE—You will find our new Pyrex glassware in every kitchen and dining room. See the new model. 4 cup. \$1.75
5 cup. \$2.00
6 cup. \$2.25
8 cup. \$2.50
10 cup. \$3.00
12 cup. \$3.50



Pyrex Glass Water Glass to match \$1.25



Pyrex Glass Water Glass to match \$1.25

A wonderful selection of fancy goods for Xmas Gifts at moderate prices.



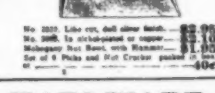
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8 qt., \$6.50
10 qt., \$7.50



GLASSWARE—You will find our new Pyrex glassware in every kitchen and dining room. See the new model. 4 cup. \$1.75
5 cup. \$2.00
6 cup. \$2.25
8 cup. \$2.50
10 cup. \$3.00
12 cup. \$3.50



Pyrex Glass Water Glass to match \$1.25



Pyrex Glass Water Glass to match \$1.25

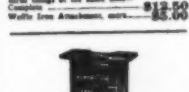
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12 cup. \$3.50



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10 qt., \$7.50



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6 cup. \$2.25
8 cup. \$2.50
10 cup. \$3.00
12 cup. \$3.50



Pyrex Glass Water Glass to match \$1.25



Pyrex Glass Water Glass to match \$1.25

NICHOLAS HARDWARE CO.

121 123-125 Marion St.
Phone Oak Park 314, 315

Branch Appliance Store
625 S. Oak Park Ave.
Phone Oak Park 831

Double Page Advertisement of Holiday Goods, Prepared by the Nicholas Hardware Company, Oak, Park, Illinois.

each family toward the progressive and service-rendering hardware store of John Smith, Merchant.

For all of these points indicated in the preceding paragraphs are a part of the service which the public has a right to expect from those who hope to secure business from that public.

And naturally, the dealer who shows his willingness and ability to serve, in the most pleasing and most efficient manner is the one who obtains the cream of the trade.

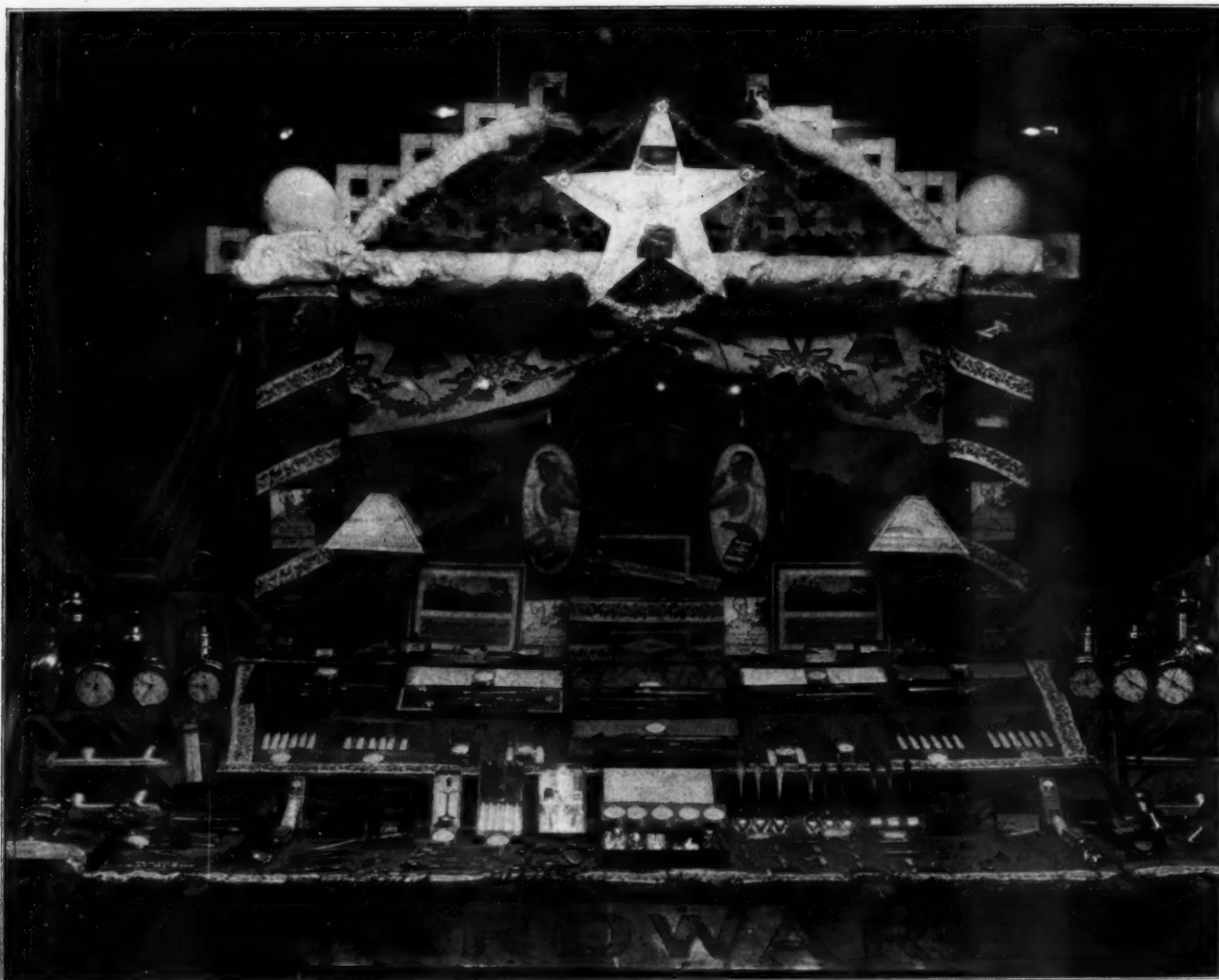
There are shown herewith two good samples of Christmas advertising.

The large advertisement is one in series of weekly

a sheet metal and warm air furnace shop in connection with his store.

Mr. Popkin has made good use of the space. Three different lines are mentioned and illustrated and an idea of the scope of prices is given. It is the sort of an advertisement which will bring people into his store with some notion as to what they want to buy. But it would have been more effective if some of the space occupied by the striking signature cut had been utilized to call special attention to one or two specific items.

The window display which is shown herewith is a fine example of real selling displays.



Attractive Window Display of Holiday Goods, Arranged by G. V. White for the Sumner Company, Limited, Moncton, New Brunswick, Canada.

announcements from the Nicholas Hardware Company, Oak Park, Illinois, one of the western suburbs of Chicago.

We have had occasion several times to comment in very complimentary terms upon the advertising and merchandising policies of this progressive enterprise, and this double-page "spread" which appeared in the December third issue of *Oak Leaves*, one of the weekly neighborhood publications of Oak Park, is fully up to the standard. It shows by good illustrations a considerable number of items. The descriptions give enough information to create interest, and in each case a definite price is quoted.

The smaller advertisement is also from an Oak Park hardware merchant, who by the way, operates

Without being overcrowded, the arrangement provides for a wide choice. There are ice skates, safety razors, silver tableware, carving sets, toilet sets, scissors, pocket knives, watches, clocks, vacuum bottles, lamps, lunch boxes and many other articles that will be appreciated as gifts by the various members of the family.

Small tickets show the price of each item and good use is being made of manufacturer's helps for the display artist.

Crepe paper in plain and holly effects is used in effective manner for the decoration of the background.

Altogether it is window display which reflects great credit on Mr. G. V. White, who arranged it for the Sumner Company, Limited, Moncton, New Brunswick,

one of the high-class hardware stores of Canada.

And comprehensive as it is, we venture to say that any hardware merchant can arrange a similar one in a comparatively short time, with very little outlay for "properties."

Get on the job, you hardware dealers who have been in the habit of letting things slide "during the weeks before Christmas. There is money to be made. But you have to make a definite effort to get it.

Follow the example of Nicholas, or of Popken, or of Sumner's, and you will have several hundred dollars' extra profit to show in your bank account for December which otherwise will not come to you.

There are plenty of items in your stock that are specially suitable for Holiday presents. Get them out where people can see them. Advertise some of them. Show some of them in your windows.

Even a last week effort will pay big returns.

Credit Man Urges Everyone to Live and Help Live.

Discussing the attitude maintained by many business men who are holding up the return to normalcy by waiting for still lower prices J. H. Tregoe, executive secretary of the National Association of Credit Men, in a message to members urges them to advise their customers to make purchases at proper prevailing prices rather than to attempt to drive prices below a safe and reasonable basis by standing off and withholding from the market.

"Live and help live," advises Mr. Tregoe, who writes:

"In the present depression price relationships have played a prominent part, just as they did in the inflation period.

"There has been a wide disproportion in the prices of raw materials and fabricated articles due to labor costs. There has been a disproportion between retail and wholesale prices.

"The lagging of retail prices in the downward trend has hindered recuperation.

"Business will undoubtedly be accelerated when confidence is restored in prices.

"Movement of prices must be natural and should be subjected to no other than natural causes.

"The volume of retail trade, especially in the large cities, has been remarkable in the present situation and it is wise and proper in our opinion as commodities are sold to the consumer that they be replaced as their replacement is needed and that the holding off of the merchants in the expectation of lower prices causes hesitation and increases the difficulty of reviving business.

"A letter sent out by a retail research association recently advised its members that in a certain line of industry failures could be expected and that arrangements had been made to pick up merchandise at low prices when these failures took place.

"This we assert is an attack on the integrity of business, and even though lower prices could be secured by the merchants interested, yet these prices would mean a loss to business generally and it may be regarded as almost axiomatic that business units prosper or suffer together.

"The replacement of commodities as they are sold and at proper prevailing prices should govern buying at the present time or at all times, and the merchant who by holding off expects to drive prices down is merely hindering the restoration of confidence in business.

"Such a process will mean eventually that unemployment may make it difficult for his customers to buy and, therefore, in the end he will suffer more than he has gained.

"'Live and help live' is the modern principle. It is a principle that is contrary to many of the old ideas when business was contracted and when men did not mingle with one another so extensively as they do at present.

"Let our buyers heed this warning. Pass on it, Mr. Credit Manager, to your customers.

"Treat them right in your sales prices.

"Tell them it is right to buy when they need the goods and can make their purchases at proper prevailing prices rather than to attempt to drive prices below a safe and reasonable basis by standing off and withholding from the market."

Who Makes Grisell Vacuum Door Check.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Can you tell us who makes the Grisell Vacuum Door Check? It was formerly manufactured at Lindsborg, Kansas, under the name of Grisell-Mays Door Check Company, but we can get no reply from them at that place.

Yours truly,

W. P. BROWN AND COMPANY.

—, Kansas, November 29, 1921.

Here Is One Way to Lessen Labor Turnover.

Often the best kind of persuasion is a simple statement of facts, free from superlatives and moralizings.

In dealing with the problem of labor turnover this kind of persuasion is more effective than the complex system used in many establishments.

Here is the text of a poster intended for display in places where the employees of an establishment or store are most likely to read it with care. It is reproduced from *Machinery*, a trade paper.

"Who's the loser?"

"Are you considering another job? If so, make sure that it's to your advantage to make a change.

"A man loses time, effort, money, and prestige jumping from job to job and is soon known as a 'drifter.'

"Your chances here are as good or better than they might be in the next place.

"We know each other. What do you know about the other people?"

"The job with the 'other firm' may seem better at a distance but is it?"

"Perhaps it's better to stay where you're known.

"Don't be a 'drifter.'"

The chap who goes around with a chip on his shoulder may be an expert poker player, but not necessarily.

Good Ideas for Window Display

Practical Lessons from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. How to Get More Passers-By to Come into Your Store.

DISPLAY OF FLASHLIGHTS STIMULATES SALES.

The oldest human instinct is curiosity.

From the simple peasant to the highly cultured man of the world, curiosity in some of its many impulses is always at work.

The solemn, dignified university professor is obliged to struggle to maintain his poise when he sees a crowd of urchins dashing for the dog fight.

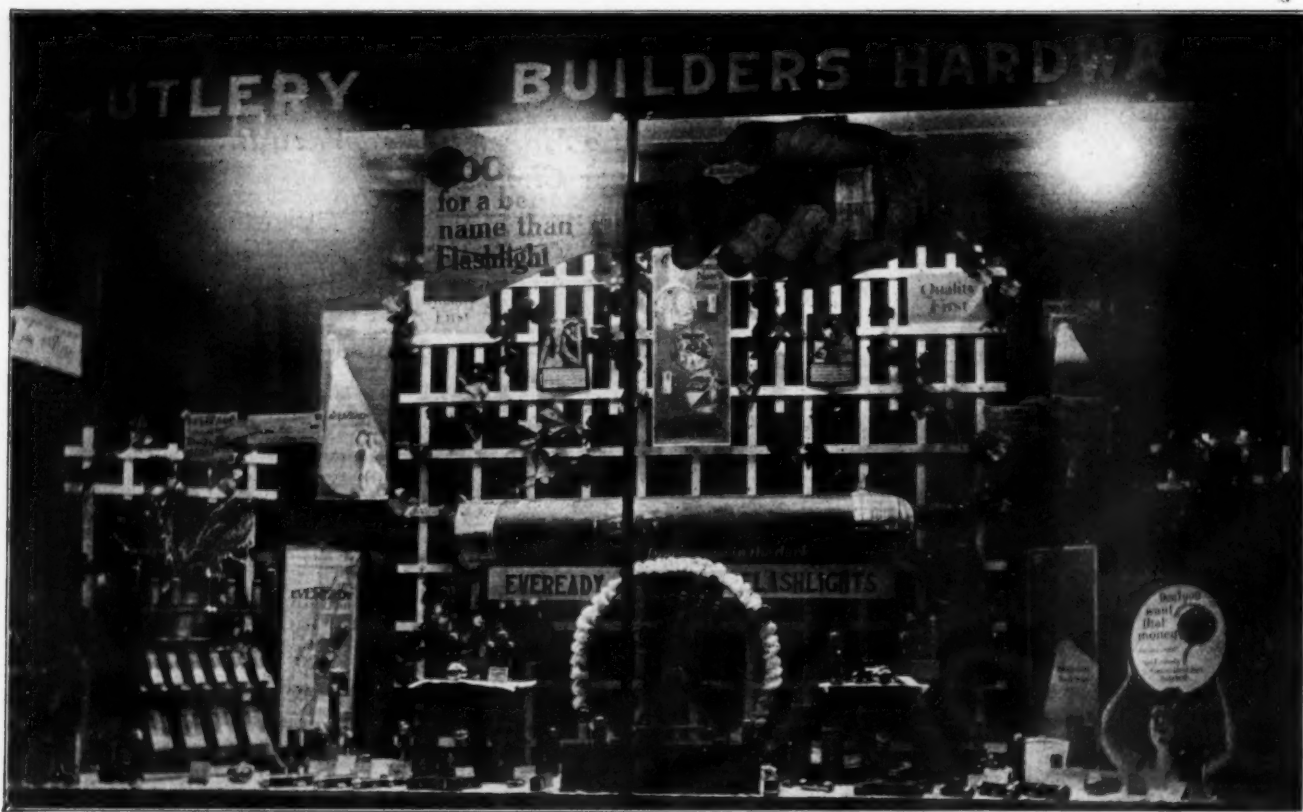
If a horse falls to the pavement in a busy street,

In window advertising, for example, the use of some device to arouse curiosity, is always effective in drawing attention to the goods on display, provided that the device is of such a nature as to suggest the commodities which surround it.

This psychology of curiosity is gainfully exploited in the window display reproduced in the accompanying photograph.

The display was designed and arranged by E. A. Saur, 1410 Yale Place, Minneapolis, Minnesota.

The curiosity of the passers-by was arrested and



Window Display of Flashlights, Designed and Arranged by E. A. Saur, 1410 Yale Place, Minneapolis, Minnesota.

people of all walks of life crowd around to look at it.

In the throng you will find winsome and petite stenographers, rotund bankers, nervous stock brokers, pugilists, newsboys, lecturers on psychology, printers, physicians, society women, teamsters, all actuated by the same primal instinct of curiosity.

Let some man stand at the intersection of any street in a big city where thousands of people are passing back and forth. Let him gaze upwardly intently for a minute or so. Presently, he will be surrounded by hundreds of other people looking upward in the same direction.

These are plain truths not beyond the experience of the average man.

It is the application of them, however, which distinguishes the merchant from the storekeeper.

held by a bicycle wheel in the center of the window, driven by air from a vacuum cleaner.

As described by Mr. Saur, four flashlights were arranged on the rim of this wheel in such a way as to flash when they reached the top and also at the bottom. Moreover, at each side of the window was a flashlight lying on a tissue paper napkin. Every time that the wheel went round, these flashlights would also light.

The observers were much puzzled as to how these effects were attained.

Naturally, their interest was aroused as a consequence of their curiosity being stimulated.

Many of them came in to have new batteries put in their flashlights and then took occasion of the purchase to ask how flashlights in the windows were operated.

The large flashlight in the back of the wheel, says Mr. Saur, is one of the signs sent by the manufacturer. It was mounted on a ten inch furnace pipe hung on the front of the lattice work.

The stock of flashlights had to be renewed several times during the two weeks that the window display was on exhibit.

The background of this window was of black cloth and the lattice work painted white.

On either side were large ferns, serving to lend decorative impression to the entire exhibit.

Put Price Cards in Your Window Display.

A window display without show cards or price tickets is like a plough without horses.

The plough is there, to be sure, but there is no power with which to make the plough move.

As the plough makes the furrows when force is applied, so do show cards reveal to the onlooker in some way or other the importance of knowing what there is to be known about the goods in the display.

The idea of a show card is to tell directly or indirectly some thought or suggestion concerning the goods received by the onlooker and he will be impressed to and this suggestion if applied in the right way, will be the extent of having learned some one thing in connection with your goods.

Finger Marks on a Saw Mean a Lot to Careful Merchant.

There is a wide difference between a hardware man who is making money and one who is not, says H. O. Roberts, Secretary Minnesota Retail Hardware Association. It shows in the man himself and it speaks in loud terms when you look at his store.

Some men are not money makers, others just naturally make money on every turn. Whatever they buy is sold at a fair profit because they had the good judgment to buy what people would want and at the right price.

Some men are naturally good salesmen, they seem to know just how to meet people and say the right thing about the weather, the customer's family or the goods under consideration. Such a man knows whether the merchandise looks best up on the counter or sitting on the floor.

Another man seems to be born wrong for he is certain to say the wrong thing at the right time to queer a sale.

A stranger comes into his store and he immediately gets busy walking to another part of the store, possibly continues to talk to some one else in order that he may keep the stranger at a distance which plainly, as if spoken in words, is acknowledging his weakness as a good buyer who is always ready to investigate or at least listen to any man who has something to sell.

This man never sees merchandise deteriorating in his store. Finger marks on a saw do not mean anything to him. He is not interested in a clean well arranged show case. He does not seem to be conscious of the fact that his store looks like a very poorly kept warehouse.

What is the difference between a successful man and the one who is a failure?

Is it possible for a man who is a failure to change his course and make a success in business?

Can a man who is not successful become a success or should he be told by some one that he is a failure and that there is no hope for him in the business world. Or can something be done that will get him headed toward success?

Success does not depend on the location in a town or city, neither does it depend on the amount of money one has for a start and he may even be a stranger in the town when he opens up for business he may have only a very limited amount of money.

A "success" man can start on some back or side street with little money, no credit, no friends, no pull, no special training but just watch his store, clean, attractive, a genial smile for everyone, no trouble to accommodate any customer, eye open to see what every salesman has to offer and very soon he is ready to slide into a better location, his stock increases, the bank asks for the privilege of helping him, customers go out of their way to buy what he has to sell.

Give AMERICAN ARTISAN for a Year as Christmas Gift.

Giving expression to the spirit of goodwill which beautifies the Christmas holiday season is one of the ways in which human nature is kept from becoming harsh and cynical.

Business is not everything; but business ought to be everything, rightly considered.

The business of life is to make life more pleasant and to achieve happiness.

This can be done in a tinshop as well as on a golf course, in a hardware store as well as on a fishing trip.

It all depends upon our mental attitude toward the forces and materials of our environment.

Of first importance, therefore, is the necessity of carrying the right mental attitude throughout every day of the year, of maintaining the friendly relations stimulated by the holiday spirit after the season of cheerful greetings and gift-making has come to a close.

A gift of a box of chocolates can be made to express the holiday spirit as eloquently as anything else, because it is the motive which counts.

But the chocolates are soon consumed and the memory of the motive which actuated their giving fades into oblivion.

Wherefore, it is a part of wisdom to bestow such gifts during the holiday season as will prolong the memory of the spirit of their giving.

That is why it is sincerely suggested to hardware dealers and sheet metal contractors that they consider the advantages of giving subscriptions to **AMERICAN ARTISAN AND HARDWARE RECORD** to their employees as suitable, helpful, and lasting Christmas gifts.

Not only will such subscriptions adequately express the feeling of goodwill and friendliness which is part of the holiday spirit, but they will also translate that spirit of friendliness into tangible values for the recipients of subscription gifts by bringing to the employees of the hardware retailer and sheet metal con-

tractor various instructions, helps, and improvements every week of the year for the betterment of salesmanship and craftsmanship.

Put first on your list of gifts this season a subscription to *AMERICAN ARTISAN AND HARDWARE RECORD* for every one of your employes.

You will be glad that you did so—glad, scores of times—before the year's subscription runs out.

Affirms Importance of the Man Behind the Counter.

There are selling plans and selling plans—plans that sell to the retailer and plans that also sell the merchandise that has been sold to the retailer.

The manufacturer or wholesaler who puts in all his time selling to the retailer and none of his time, or next to none of it, in assisting the retailer to sell the merchandise the retailer has been loaded up with, is not building a permanent and enduring business structure.

There was a time years ago when many manufacturers and wholesalers believed implicitly in the idea that if he could sell his goods to the retailer, the retailer, simply had to sell the merchandise in order to get his money out of it, and that was good business.

There are not many of these concerns left, because it was discovered that there was little or no clear profit on the first order sold to the retailer, and that there were no additional orders from which to reap substantial profits.

Nowadays, a selling plan that is a real selling plan, one that builds up the customer's business and that of the manufacturer or jobber at the same time and, therefore, justifies itself by results, is a plan that sells the dealer in the first instance and the dealer's customer in the second instance—in fact, sells right through to the consumer.

Such concerns can well afford to spend all they make on the first order in establishing a new account, because they are insuring many reorders on which they will make an accumulation of profits.

There is another class of manufacturers and wholesalers who exert force where persuasion and information should be applied.

Their selling plan includes the idea of selling to the public and making the dealer sell their merchandise because it is called for.

They have been successful, but the full force of the advertising has never been felt.

They are beginning to learn that they must "sell" the dealer and keep sold, or their advertising appeals meet resistance from a source where friendship is essential to the success of those appeals—the man behind the counter.

The dealer wheel in the merchandise selling machine must not be allowed a slip a cog. It will run smoothly only when it is fitted in properly with the production, consumption, service and other wheels of the mechanism.

The manufacturer's and wholesaler's job is to sell him and keep him sold on merchandise and service, just as he is selling the public merchandise and service.

Member of the Old Guard Passes Away.

Suddenly, but peacefully, life came to an end, December 3rd, in New Orleans, Louisiana, for John A. Skiff, member of the Old Guard Southern Hardware Salesmen's Association and traveling salesman for Geuder, Paeschke & Frey Company of Milwaukee, Wisconsin.

Mr. Skiff had been visiting New Orleans for years as the representative of the Milwaukee concern and he was well and favorably known to everyone in the hardware business in this section.

Mr. Skiff's home was in St. Louis, Missouri, where he has a wife. He was a member of Elks Lodge No. 9 and Pride of West Lodge No. 179, F. & A. M., both of St. Louis. He was about 50 years of age.

Uses Effective Plan to Collect Delinquent Accounts.

A Chicago hardware dealer was carrying an account that was long overdue, the customer having ignored numerous requests to come in and settle up.

Finally the hardware man added a fictitious item to the man's bill in his monthly statement, To six hammers at 85 cents each, \$5.10."

A day or two later the man came in, visibly annoyed.

"You've charged me here for half a dozen hammers," he asserted, "and I have never bought a hammer in my life—either here or anywhere else."

"That is funny," said the dealer; "there must be a mistake somewhere. We will just deduct \$5.10 and you can pay the difference."

The customer acted on the suggestion and went away, happy that he had escaped an overcharge.

Actual Demonstration of an Article Increases Sales.

Demonstration is always a firstclass means of stove and range advertising; and, where possible, demonstrations should be put on. If, for instance, you have gas connections, you can show the range in operation; or you can perhaps demonstrate it with other fuel.

Paint specialties can be readily demonstrated; silver polish and similar articles can be demonstrated; a food chopper can be demonstrated and will make you a lot of sales in return for very small space to show it.

Trade Opportunities in Foreign Lands.

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

372.—A firm of importers in Canada desires to purchase 20 tons of both black and galvanized steel sheets of from 10 to 24 gauge. Quotations should be given f. o. b. shipping point. Terms, cash. References.

381.—A commercial corporation in Spain desires to secure

the representation of manufacturers of electrical apparatus, for the sale of electric irons, ovens and grills, heaters, and vacuum cleaners. Correspondence should be in French or Spanish. Catalogues, literature, and prices are requested, preferably in Spanish. References.

383.—An importing firm in Norway desires to purchase and secure an agency for the sale of hand tools. Quotations should be given f. o. b. New York. Payment to be made through bank in Norway. Reference.

391.—A manufacturing firm in Sweden desires to purchase tin plate and aluminum sheets in coils of a thickness of 0.08, 0.10, and 0.20 millimeters. It also desires to manufacture for American firms small articles of sheet metal. Quotations should be given c. i. f. Swedish port. Payment to be in cash. References.

Coming Conventions.

Western Warm Air Furnace and Supply Association, Hotel Savery, Des Moines, Iowa, December 14, 1921. John H. Hussie, Secretary, 2407 Cuming Street, Omaha, Nebraska.

The Western Retail Implement, Vehicle and Hardware Association, Kansas City, Missouri, January 17, 18, 19, 1922. Exhibition at Convention Hall in charge of Louis W. Shouse. Headquarters, Coates House. Sessions in Century Theatre. H. J. Hodge, Secretary, Abilene, Kansas.

Pacific Northwest Hardware and Implement Association Convention, Davenport Hotel, Spokane, Washington, January 17, 18, 19, 20, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Mountain States Hardware and Implement Dealers' Association, Denver, Colorado, January 24, 25 and 26, 1922. W. M. McAllister, Boulder, Colorado.

Texas Retail Hardware Association, Adolphus Hotel, Dallas, Texas, January 24, 25 and 26, 1922. A. M. Cox, Secretary, 1808 Main Street, Dallas, Texas.

Oregon Retail Hardware and Implement Dealers' Association Convention, Imperial Hotel, Portland, January 24, 25, 26, 27, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Kentucky Hardware and Implement Association, Jefferson County Armory, Louisville, Kentucky, January 24, 25, 26, and 27, 1922. J. M. Stone, Secretary-Treasurer, Sturgis, Kentucky.

Indiana Retail Hardware Association, Convention and Exhibition, Athenaeum Hall, Indianapolis, January 24, 25, 26, 27, 1922. G. F. Sheely, Secretary, Argos.

Sheet Metal Contractors' Association of Pennsylvania, Hotel Berkshire, Reading, Pennsylvania, January 26 and 27, 1922. W. F. Angermyer, Secretary, 714 Homewood Avenue, Pittsburgh, Pennsylvania.

Idaho Retail Hardware and Implement Dealers' Association, Boise, Idaho, week of January 31, 1922, dates to be announced later. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

West Virginia Hardware Association Convention and Exhibition, Wheeling, January 31, February 1, 2, 1922. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Nebraska Retail Hardware Association Convention, Lincoln, January 31 and February 1, 2, and 3, 1922. George H. Dietz, Secretary, 414-417 Little Building, Lincoln, Nebraska.

Michigan Retail Hardware Association Convention and Exhibit, Grand Rapids, Michigan, February 7, 8, 9 and 10, 1922. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids, Michigan. A. J. Scott, Secretary, Marine City, Michigan.

Oklahoma Hardware and Implement Association Convention and Exhibition, City Auditorium, Oklahoma City, Oklahoma, February 7, 8, 9, and 10, 1922. W. B. Porch, Secretary-Treasurer, Oklahoma City.

Wisconsin Retail Hardware Association Convention and Exhibition, Milwaukee, February 8, 9, 10, 1922. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Pennsylvania and Atlantic Seaboard Hardware Association, Inc., Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, February 13, 14, 15, 16, 17, 1922. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh.

California Retail Hardware and Implement Association, San Francisco, California, February 14, 15 and 16, 1922. Le Roy Smith, Secretary, 1112 Market Street, San Francisco, California.

Illinois Retail Hardware Association Convention, Hotel Sherman, Chicago, February 14, 15, 16, 1922. Leon D. Nish, Secretary, Elgin, Illinois.

Minnesota Retail Hardware Association Convention, St. Paul, February 14, 15, 16, 17, 1922. H. O. Roberts, Secretary, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

Ohio Hardware Association Convention and Exhibition, Columbus, February 14, 15, 16, 17, 1922. Headquarters, Deshler Hotel. Exhibition, Memorial Hall. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Iowa Retail Hardware Association Convention and Ex-

hibit, Coliseum, Des Moines, Iowa, February 21, 22, 23, and 24, 1922. A. R. Sale, Secretary-Treasurer, Mason City, Iowa.

Michigan Sheet Metal Contractors Association, Jackson, Michigan, February 21, 22 and 23, 1922. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Missouri Retail Hardware Association Convention and Exhibition, St. Louis, Planters Hotel, February 21, 22, 23, 1922. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

New England Hardware Dealers' Association Convention and Exhibition, Paul Revere Hall, Mechanics' Building, Boston, Massachusetts, February 21, 22, 23, 1922. George A. Fiel, Secretary, 10 High Street, Boston.

Virginia Retail Hardware Association, Roanoke, Virginia, February 21, 22, and 23, 1922. Thomas B. Howell, Secretary, Richmond, Virginia.

South Dakota Retail Hardware Association Convention and Exhibition, Mitchell, South Dakota, February 21, 22, 23 and 24, 1922. H. O. Roberts, Secretary, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

New York State Retail Hardware Association Convention and Exhibition, Rochester, February 21, 22, 23, 24, 1922. Exhibition at Exposition Park. Headquarters and sessions at Powers Hotel. J. B. Foley, Secretary, 412-413 City Bank Building, Syracuse, New York.

Old Guard Southern Hardware Salesmen's Association, New Orleans, Louisiana, April 20, 1921. R. P. Boyd, Secretary-Treasurer, Knoxville, Tennessee.

Southern Hardware Jobbers' Association, New Orleans, Louisiana. Tentative dates, April 19, 20, and 21, 1922. John Donnan, Secretary, Richmond, Virginia.

American Hardware Manufacturers' Association, Spring Meeting, New Orleans, Louisiana, April 19, 20, and 21, 1922. Frederick D. Mitchell, Secretary-Treasurer, 4106 Woolworth Building, New York City.

Southeastern Retail Hardware and Implement Association, Convention and Exhibit, May 9, 10, 11 and 12, 1922, Chattanooga, Tennessee. Walter Harlan, Secretary, 460 St. James Building, Jacksonville, Florida.

Hardware Association of the Carolinas Convention, Winston-Salem, North Carolina, May 17, 18, 19 and 20, 1922. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

Sheet Metal Contractors' Association of Indiana, Indianapolis, Indiana, May 15, 1922. Ralph R. Reeder, Secretary, 312 East Sixteenth Street, Indianapolis, Indiana.

National Association of Sheet Metal Contractors Convention and exhibition in the Athenaeum, Indianapolis, Indiana, May 16, 17, 18, and 19, 1922. Edwin L. Seabrook, Secretary, 608 Chestnut Street, Philadelphia, Pennsylvania.

Associated Advertising Clubs of the World, Milwaukee, Wisconsin, June 11, 12, 13, 14, and 15, 1922. Carl Hunt, Secretary, 110 West 40th Street, New York City.

Retail Hardware Doings.

Arkansas.

A new brick building under construction at Coal Hill will be occupied by the Coal Hill Hardware Company.

California.

The construction of a one-story implement salesroom has been started by the Jones Hardware Company of Porterville.

Illinois.

The Trenton Hardware Company of Trenton has sold its stock of harness and saddlery to John Manhardt.

The hardware store of Mrs. Lucy Foor at Tower Hill, Shelby County, has been destroyed by fire.

Charles Guth has opened up a hardware and plumbing store in Hartford.

Louisiana.

A hardware department has been added to the furniture store of Alphonse Brenner Company, Incorporated, 1323 Texas Avenue, Shreveport.

Minnesota.

The hardware store of Dirck and Engeles of Marshall, has been destroyed by fire.

Missouri.

Mrs. Elizabeth Luckenbaugh, who owns and conducts the hardware store of Bier and Company in Palmyra, has sold that portion of the business known as the farm implement department, to Henry Frankenbaugh.

South Dakota.

M. H. Holbrook has sold his interest in the Holbrook and Warner Hardware Company at Colome to Joseph Eppenbaugh.

Wyoming.

James Kibben and I. M. Capper have purchased an interest in the Baird Hardware Company at Sheridan. Although Jay Baird has retained an interest in the business, Mr. Kibben and Mr. Capper are to acquire the active management on January 1st, when the firm name will be changed to the Kibben-Capper Hardware Company.

Advertising Help and Comment

Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.

In the part of the country served by the W. W. Thomas Hardware Company, Tampa, Florida, there is use every month of the year for lawn mowers, hose reels, nozzles, lawn sprinklers, grass catchers, and other goods of the class mentioned in the advertisement reprinted here-

Indeed, the advertisement goes so far as to intimate that its stock is primarily intended, "for folks who appreciate pretty lawns."

This might seem at first reading to be a weakness in the wording of the advertisement.

The objection presents itself that

be stirred to action by advertisements of this kind.

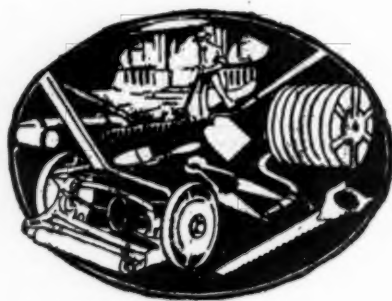
Emulation is easily aroused.

Community or neighborhood pride in appearances can be developed to the advantage of the community and the profit of the dealer who advertises in the fashion of the W. W. Thomas Hardware Company.

* * *

A laudable feature of the advertisement of The Bassler Hardware Co., reprinted herewith from the *Sturgis Journal*, Sturgis, Michigan, is the linking of the advertisement with the store's window display in the words:

"See our window. You will find



What Will a Run-Down Lawn Cost You?

Ever stop to think that indifference as to appearances is a costly thing? The man who fails to keep his house well painted and in good repair, is the man whose lawn is not worth spending a few dollars on.

Often you ride past a street of homes and hear the expression, "There's a beautiful place!" Think back now. Don't you remember those "beautiful places," set back from green, well kept lawns?

Let us hope one of these "beautiful places" was yours. And for you we have just received a new lot of two-year guaranteed

Garden Hose, 5-8 inches, 5-ply, per foot . . . 12c

For Folks Who Appreciate Pretty
Lawns, We Carry in Stock—

**Lawn Mowers (14 to 16-inch blades), Hose
Reels, Nozzles, Lawn Sprinklers,
Grass Catchers, etc.**

W. W. THOMAS HARDWARE CO.

"HARDWARE THAT STANDS HARD WEAR."
913-915 Franklin Street.

with from the *Tampa Times*, Tampa, Florida.

Consequently, this advertisement does not depend for its appeal upon a seasonal timeliness.

It will be noticed that the W. W. Thomas Hardware Company directs its message to the esthetic sense of the community.

The argument of beauty and pride in attractive homes and well-kept lawns is effective with a great majority of the people.

people whose houses are not in good repair and well painted are also indifferent to pretty lawns.

But this is not the intention of the text.

As a matter of fact, there is a subtle flattery in the classification of "folks who appreciate pretty lawns."

No one wants to acknowledge that he is indifferent to the appearances of his home and his property.

If he has been neglectful he can

it easy to pick out the things you need."

The people of Sturgis are told by The Bassler Hardware Company that their needs for kitchen utensils and many other household goods can be filled at very attractive prices.

Again the objection suggests itself that "very attractive prices" is too vague an expression.

There is space enough in the original, which measures 4 by 5 inches, in which to state enough prices to give a better idea of the reasonableness and the advantage of buying kitchen utensils from The Bassler Hardware Company.

Kitchen Utensils

We are especially well fitted to fill your needs for Kitchen Utensils and many other household goods. Our kitchen department includes Enamelware, Laundry Goods, Aluminum Ware, Brooms, Brushes, Mops, Pyrex Glassware, Cutters, Moulds, etc.

Granite Tea Kettles, Dish Pans, Pails and Cabinets at very attractive prices. See our window. You will find it easy to pick out the things you need.

The Bassler Hardware Co.

"THE WINCHESTER STORE"

Warm Air Heating and Ventilating

*Better Installations. How to Sell More Warm Air Heaters.
Reports of Progress in Warm Air Heater Research Work.
Ventilating Factories, Garages, Theaters, and Houses.*

DISCUSSES THE BEARING OF VENTILATION ON HEALTH.

The weekly bulletin of the Department of Health, City of Chicago, under date of December 3, 1921, discusses the bearing of ventilation upon health, as follows:

It is well known that people who practically spend their lives in the open air rarely have colds. And this is true, regardless of the fact that they may be exposed to severe changes in the weather and to extremely low temperatures.

Dr. Leonard Hill, in a report prepared for the Medical Research Committee of London on "The Science of Ventilation and Open Air Treatment," has devoted a very interesting and illuminating chapter to a discussion of what he calls "The Influence of the Atmospheric Environment on the Respiratory Membranes."

In this report he tells us that epidemics of colds are most common when there is a high humidity and a variable temperature, but on the whole cool; also when the weather is raw with melting snow or high winds charged with cold rain.

Cold, dry weather and strong drying winds do not favor such outbreaks. In support of this he cites the winter climate in Manitoba, where the air is dry and an abundance of sunshine; but in this climate, it has been noticed, that a week of foggy, quiet weather will result in a largely increased number of cases of bad colds, bronchitis and pneumonia.

Referring again to the statement that those living open air lives are free from colds regardless of exposure and living conditions, Shackleton reports that in its antarctic expedition there was not a single outbreak of colds among his men until after they had opened a bale of clothes which had been packed in London.

The health of the men and crews of the navy at sea in war is much better than in peace times. Men, taken from shops or offices and turned into soldiers and put under canvas, it has been demonstrated, are found to be practically free from the colds from which they usually suffered in civil life.

A long while ago Benjamin Franklin wrote that people who lived in the forest or in barns with open windows do not catch colds and that the disease called a cold is usually caused by impure air, lack of exercise and overeating.

A French soldier writes as follows: "When I was in Paris before the war I never passed a winter without coughs and colds and rheumatics. Here in the trenches I never have a thing the matter with me and we're all like that. At medical inspection the other day, out of 400 men there was only one man who had anything the matter with him and he had his finger cut. We

were on an exposed slope, bare and cheerless, with mud in generous quantities and a chill, penetrating wind; yet none of us had colds."

But while most colds or rather certain kinds of colds are due to infection and are usually contracted indoors and overcrowded places of assembly, yet there are colds which according to Dr. Hill can be charged to weather conditions.

Some people, it is known, are peculiarly sensitive to drafts and, because this is true, drafts have been popularly supposed to cause colds.

A cold draft on a flushed skin in a warm room, acting reflexly or directly on a flushed nasal membrane, causes sneezing and coughing in many people.

It is generally believed that more nasal catarrhs are contracted through cold feet than in any other way; and yet soldiers, whose feet are chilled until there results local death of tissue, do not have colds in the head as a result.

This raises the question, then, under what conditions does chilling of the feet affect the nasal membranes?

Cold feet per se, according to Dr. Hill, do not necessarily have a congested effect on the nose, for he says: "I have observed in myself when walking in melting snow or cycling in a cold wind along snow-covered roads, that my feet may be most uncomfortably cold, but the nose or nasal passages are unaffected. Also that my face under these outdoor conditions has been as cold as my feet. It is the indoor conditions of cold floor and warm, stagnant air around the head which produce the congestion and swelling of the nose and these are conditions entirely opposed to natural conditions out of doors."

Out of doors the wind moves at a much greater velocity at the head than at the foot level. The ground, too, is warmed by the sun.

As a rule, then, excepting such unpleasant conditions as pertain to thawing snow, the head is cooled out of doors at a greater rate than the feet. Cool breezes blowing around the head, the radiant heat of the sun and warm, dry ground upon which to stand or walk are ideal for outdoor conditions.

In crowded rooms, which, as stated, are the cause of most colds, infection takes place from mucous spray sneezed, coughed or spluttered out in speaking.

The inhaled bacteria will be caught by the mucous membrane which completes the infection. In those who live out of doors, not only is the membrane kept taut, but the flow of arterial blood through it is rapid, for the inhaled air has to be warmed up and moisture rapidly evaporated from the membrane, so as to saturate this air at body temperature.

Thus, more lymph comes out into the membrane from the blood vessels and this contains protective sub-

stances. Offensive bacteria are either washed away or destroyed and thus kept out.

The outdoor conditions, as noted by Dr. Hill, which tend to cause colds are those that people should protect themselves against by being properly clothed. It is always important to keep the feet dry and warm.

Presents Improved Pipeless Warm Air Heater to the Trade.

After long and careful testing and modification of design, the Utica Heater Company, Utica, New York, has produced and perfected the Type "A" New Idea Pipeless Warm Air Heater, which will be ready for distribution after the first of January, 1922.

It is the confident statement of the manufacturers that every part of the New Idea Type "A" is correctly proportioned for the work which it is to perform.

The Utica Heater Company announces that the price of this improved pipeless warm air heater will be low because of the large quantity production by machine molding methods.

Descriptive literature and other information concerning the Type "A" New Idea Pipeless Warm Air Heater can be obtained by addressing the Utica Heater Company, Utica, New York, or the Chicago office of the Company, 218-220 West Kinzie Street, Chicago, Illinois.

Will Publish Heating and Ventilating Guide Book.

According to an announcement in the official Journal of the American Society of Heating and Ventilating Engineers, the Society has completed its plans for an annual reference book, which will be issued under the direction of the special Guide Publication Committee and which will be called "The American Society of Heating and Ventilating Engineers' Guide, 1922."

The Guide will be a cloth-bound book 6 inches by 9 inches, containing from 400 to 800 pages of reference data which will be of inestimable value to the profession and the trade of heating and ventilating.

The contents will comprise:

- (a) A full text of the adopted standards of the Society;
- (b) A manual of the most useful data determined and compiled by the Society;
- (c) A synopsis of the history of the Society, detailing the services performed and those it is prepared to perform;
- (d) A section exemplifying the best engineering and equipment practice of today by means of illustrations and technical descriptions of the mechanical equipment of typical buildings of all classes;
- (e) An alphabetical index of those consulting engineers most closely allied to the heating and ventilating field, with definitive listing of their principal operations;
- (f) A catalog data section devoted to descriptions of modern manufacturers' equipment, including such vital data as weights, dimensions, ratings, etc., uniformly presented.

Copies of this booklet will be promptly mailed to

all members of the Society, together with a letter pointing out the ways in which the individual members can assist this meritorious project. The Guide Publication Committee bespeaks the earnest cooperation of every member of the Society.

The Guide will be published in February, 1922, immediately after the Annual Meeting, and annually in January thereafter. Copies will be distributed gratis to every member of The American Society of Heating and Ventilating Engineers, the American Institute of Architects, the Heating and Piping Contractors' National Association, a selected list of the principal consulting engineers in heating and ventilating, heating and ventilating contractors, heating and ventilating trade publications, selected technical libraries, etc.

Handy Coupon Brings Catalog and Net Price Book.

Everybody reads advertisements nowadays.

They are gateways to opportunity.

Business and manufacture are so immense, so complex, and so numerous in their details that you have to read advertisements to find the special things which pertain to your trade.

Thus, if you deal in or install warm air heaters, you are certain to require information about registers and register prices.

Therefore, the Rock Island Register Company, Rock Island, Illinois, has thoughtfully included a small coupon in the lower right-hand corner of its advertisement in this issue of AMERICAN ARTISAN AND HARDWARE RECORD.

The coupon is for your convenience. By writing your name and address on the dotted lines, provided for that purpose and mailing the coupon to Rock Island Register Company, Rock Island, Illinois, it will bring you the latest catalog and net price book of warm air heater registers.

Professor Hoffman Praises Warm Air Heater Special Edition.

Copies of the "Warm Air Heater Special" edition of AMERICAN ARTISAN AND HARDWARE RECORD for 1920, which bears the date December 25, 1920, Volume 80, No. 26, have been sent to various professors and other leaders in the trade as a basis for suggestions regarding the forthcoming "Warm Air Heater Special."

Much favorable comment has been received from many of the persons to whom copies were mailed.

Typical of such comment is the following brief but gratifying letter from Professor J. D. Hoffman, Director, Department Practical Mechanics, Purdue University, Lafayette, Indiana:

TO AMERICAN ARTISAN AND HARDWARE RECORD:

I wish to thank you for the copy No. 26 of AMERICAN ARTISAN AND HARDWARE RECORD which came to my desk. This is full of valuable information to the furnace men and should be appreciated by them.

Yours very truly,

J. D. HOFFMAN.

Purdue University,
Lafayette, Indiana,

Practical Helps for Tinsmiths

No Two Jobs Are Exactly Alike. Therefore, the Sheet Metal Worker Has to Meet Each Difficulty as It Comes. Send Your Problems to Us. Let Our Experts Help You.

PATTERNS FOR TANK BOTTOMS.

By O. W. Kothe, Principal St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

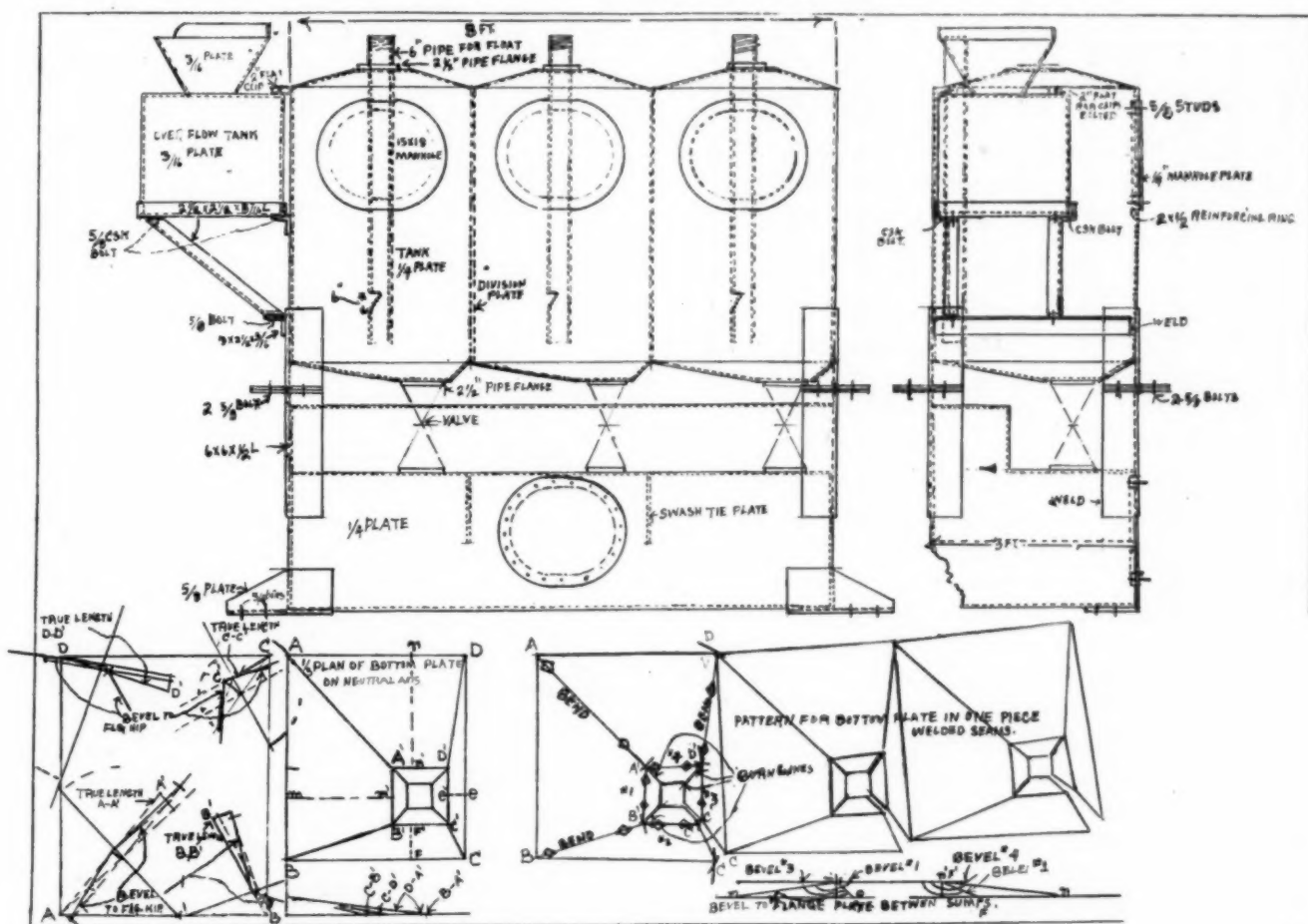
Aboard ship, especially some of the naval craft, few tanks are made as shown in this drawing, where several individual tanks are placed in a line and each fed with a pipe line and valve.

As these tanks are square or rectangular, whichever the case may be, the bottoms have peculiar shapes,

It is understood that where metal of a quarter thickness or so is used, then a neutral axis line must be used to develop the working drawing.

This neutral axis is the center line of plate and it does not matter whether the plate is a 1/16 of an inch thick or 10 or 12 inches thick.

This central line is used for measuring and constructing the working drawing to. Otherwise the same geometrical treatment is required for heavy plate as for light metal.



Patterns for Tank Bottoms.

being placed off center in one corner as our plan for the first tank shows.

Attention is called to the construction details of how the angle irons are bent and attached in supporting the work, also many other details as the overflow tank and hopper, brackets, etc.

To set out the pattern for the bottom, a plan is drawn as A-B-C-D and then the hip lines are determined by the diagram shown below. Where C-B'; C-D'; D-A' and B-A' are the true lengths for the lines in plan. The rise of the bottom is not very pronounced as the elevation shows. By means of these triangles the patterns are laid out as shown to the right.

Where true angles are required for the hips as in these bottoms, they can be determined as shown at the left of plan. An enlarged treatment on determining the true bellows of hips will be taken up in the later drawings showing other features as it is a little small to see details by the scale of our drawing.

Its main feature is to show to the extent laying out work is met with on ships and in fact problems of many peculiar shapes must be worked out in marine work as well as on land.

Some people are like a million-dollar check on a ruined bank. They look big, they promise great things, but you can't cash them.—Lincoln.

Square Pattern Cellular Core Can Be Improved by Impressed Water Containers in Vertical Channels.

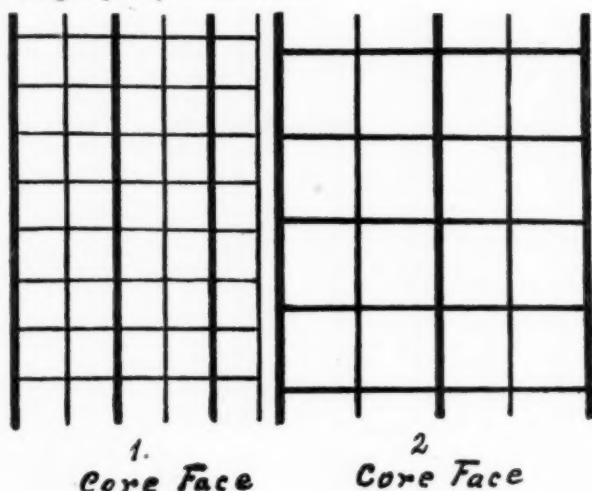
The Parts of This Type of Automobile Radiator Which Are Most Likely to Need Repairs Are Indicated in the Following Article:

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by E. E. Zideck, New York City.

TWELFTH ARTICLE.

Several of the better grade popular passenger cars are provided with radiators having the square pattern cellular core, described in the preceding article, improved by impressed water containers in the vertical channels.

The improvement undoubtedly makes for greater cooling capacity of the core.



The protruding impressions in the cell-plates are situated so as to be enveloped by the air current, causing the air which deflects while striking them, to strike the opposite walls of the air passage and impart its cooling property to them.

There are varying sizes of the pattern in this core. Several makes have air passages as small as those illustrated in picture No. 1.

The impressed protrusions which contain water, are small in proportion. A few of the makes are the exact reproductions of the square pattern core shown in the last article, except that, instead of the cell walls being smooth, the impressed protrusions, illustrated in the accompanying illustration No. 3, make them appear corrugated.

These impressions in the metal are not seen upon the core face, which is of the square pattern.

They commence within the air passage, about $\frac{1}{4}$ inch from the face, and are seen only if the core is examined more closely.

These protrusions, it should be remembered, are impressed, or stamped, in the metal.

The edges of the metal strips of which the water channels are formed, remain not stamped, and are, therefore, much stronger than the metal of the protrusions, which is much thinned by the stamping process, and is easily torn, being the main source of leaks in this core.

The majority of cores of this pattern now in use on cars have special strips of metal inserted, forming waterless partitions between the channels proper.

The illustrations relate to these patterns. The heavy lines in pictures 1, and 2, indicate water channels. The lighter vertical lines represent the specially inserted metal strips partitioning the water channels.

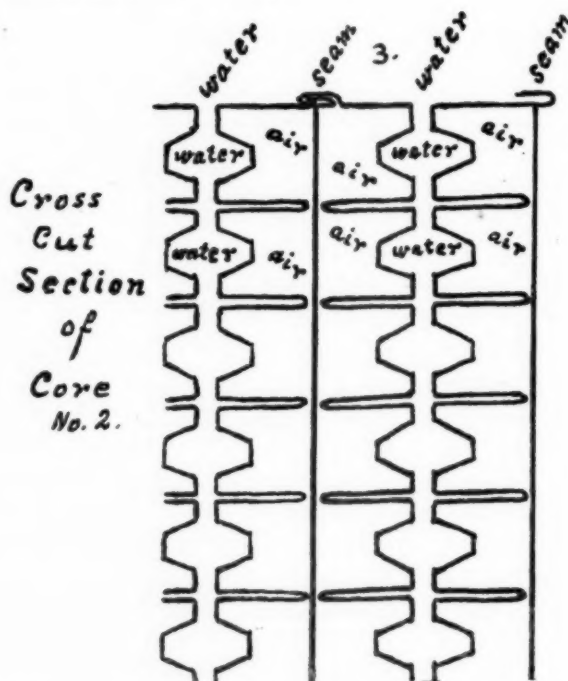
The horizontal lines are formed each of two thicknesses of the metal, as shown in pictures 3, and 4.

The cross cut section marked 3, shows the core as it would appear if cut across in the middle of the core-depth.

It shows the channels through which passes water; shows the impressed protrusions, which form water containers, extending into the air passages; and shows the horizontal extensions of the metal strips of which the water channels are formed, forming connections to the inserted partition. In the finished core the horizontal extensions, the water channels and the partitioning strip each present a single unit of metal, the difference in line thicknesses not being marked as strongly as in the pictures 1, and 2.

The illustration 4, finally, presents the core construction more clearly, the air passages being here enlarged to one inch squares.

The letters b, c, d—on top of the picture—show three separate metal strips.

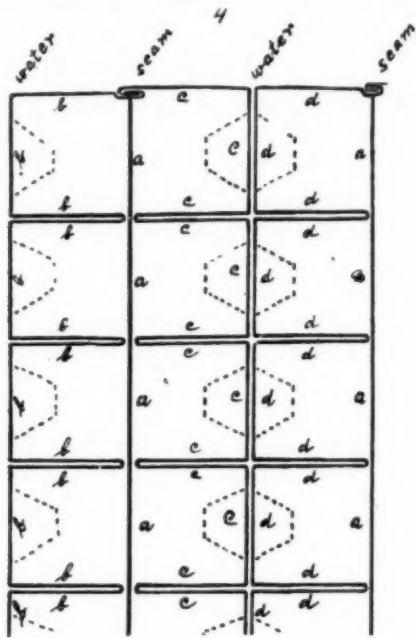


Each of these strips extends from the top to the bottom of the core. Each is folded at just as many places as there are squares in the vertical section of the core.

Lines marked a-a show the straight, not bent or corrugated, partition strip.

The headsheets of the core are formed in the same way as in the other cellular patterns described previously.

Strip (b) is seamed to strip (c), both at the top and the bottom ends. Strip (d) is seamed on to the strip (e), forming another unit, and so continuously.



Into the units, each comprised of two separate strips, is inserted the partition strip. Then the multitude of units required for the width of the core are arranged side by side of each other and the faces of the assembled core are dipped in solder.

The edges of the strips forming the water channels are so formed as to meet and close tightly upon each other.

The horizontal extensions come out of the stamping process tightly closed, and thus the assembled core, even before it is dipped in solder, presents the squares, indicated by apparently single lines of metal, shown in pictures 1, and 2. After dipping, every trace of individual metal thicknesses is lost.

As said above, the impressed water containers indicated by dotted lines in pictures 4, are stamped out of the metal thicknesses of the vertical sections of the water chambers, while the edges of the metal remain straight.

The water containers are inside of the air passages, but not in the front and the back of the core. The faces of the core, as shown in pictures 1, and 2, show nothing but rectangular lines forming the squares.

While it can not be denied that this pattern cellular core has more cooling capacity than the plain square pattern has, it leaks frequently, and the water chambers become easily torn away from the partitions, the result being a defaced, ugly looking core, leaks following the loosened hold of the strips.

(To Be Continued.)

Wants Best Methods for Laying Sheet Metal Roofs.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

As an old reader of your journal, I have taken a lot of interest in the articles written on the use of sheet zinc.

Their purpose was to push sheet zinc, so it would be used in places where sheet tin and galvanized iron are now used, especially for roofing and cornice work.

What we are lacking is how to lay this metal so as to get the best results.

Won't those who are in position to know give the readers a write-up on how to lay zinc roofing so it will be a successful job when finished?

The large copper mines all over the country are closed on account of the low price of the copper market. Butte, the largest copper camp in the world, feels the shut down real hard.

Copper roofing in that city has got a black eye. In 1890 the writer and his brother put on the first copper roof in Butte for one of the large smelting companies.

The smelter has long ago gone out of business. The building with the copper roof is still in good shape. The roof will last for years, in fact, there is no wear out to it.

When laying the roof, proper allowance was made for contraction and expansion. Two years later (1892) two public school buildings (the roof of each required about 75 squares of copper roofing) were built and inside of ten years had a new roof of cedar shingles put on.

The copper roofs were absolutely worthless. Why? It was certainly no fault of the copper. It was inexperienced mechanics. The architects out here are very shy recommending copper roofing, but who is to blame for this when a copper roof does not give satisfaction?

It is to be hoped that those in a position to know will from time to time give their experience on how the different metals should be laid to give satisfactory results.

At the present low price of copper, a copper roof is a high-priced roof. Should not those in charge insist that the roofing contractor, put up a first-class bond to guarantee his work for a certain number of years?

If this were done, would not the public get what they are entitled to, likewise the honest contractor? The walls of the writer's home are covered with brick-faced siding, the roof with high-grade galvanized iron standing seam style and so far is giving excellent results.

It's a little expensive in the start, but it's surely cheap in the long run. How many of the readers of AMERICAN ARTISAN AND HARDWARE RECORD insist on having, say only a sheet metal roof on their homes?

Let's all boost for sheet metal and insist on an honest job. Business will come to us. As it is now, we must run after the business.

It is not the intention of the writer to knock in any way; the real purpose is to bring our trade to the front, by exchanging our ideas so as to get the best results from the various sheet metals.

Yours respectfully,

A SHEET METAL CONTRACTOR.

—, Montana, December 3, 1921.

You can't knock over anything big with bird shot. Bird shot is all right for squirrels and quail. Don't try it on a tiger—unless you are shooting from an aeroplane. A tiger doesn't like to be annoyed in this way.

Bill Higgins Is Carrying Too Much Bone Above His Eyebrows and That's Why He Has a Small Bank Account.

He Is Still Figuring Profits on the Selling Price without Allowing Anything for Labor, Material, and Overhead Expenses.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Cleveland, Ohio.

I guess about the funniest thing on earth is to see how some fellows bid on a job.

I was invited to a little poker session over to Bill Higgins' house. It was to be a four-handed game, and nothing over ten-cent limit.

Bill had the stage all set, and we were to quit at eleven bells. Mrs. Higgins wouldn't stand for that early morning stuff.

We invested one dollar each. There was Bill Higgins, Fred Kelly, Steve Sneider and myself. About ten o'clock Bill happened to remark that he was fifty per cent ahead, and felt like quitting.

"How much money does your chips represent?" I asked.

"A dollar and a half," Bill answered.

"How do you figure that you are fifty per cent ahead?" I asked.

"How do I figure it?" Bill asked in surprise. "I figure that I had a dollar at the start, and now I have a dollar and a half. Isn't fifty cents fifty per cent of a dollar which I had when I started?"

"All right, Bill," I ventured to say, "I'll bet you a dollar that you are not fifty per cent ahead."

"You're on," answered Bill, laughing. "Now prove it."

"Oh, I'll prove it easy enough," I replied. "You had a dollar at the start, and now you have a dollar and a half all told. Now then, according to Hoyle, fifty cents is only thirty-three and a third of a dollar and a half."

I reached to grab the dollar bet, but Bill beat me to it. He could not see it at all. Turning to Fred he asked:

"Fred, how do you decide the bet?"

"I guess you win, Bill," Fred decided. "I can not see it any other way. Fifty cents is certainly fifty per cent of a dollar. Take the money, Bill."

"No," Bill declined, "I don't want to win a bet as easy as that. But satisfaction of winning is all I want. Take your dollar back," said Bill, turning to me, "The bet is all off."

"Bill," I spoke up, "do you bid on your jobs like this, too?"



J. C. Greenberg.

At this point we all cashed in. The game was stopped, and we all settled back for a good argument. Even Mrs. Higgins was interested.

"Sure I do," asserted Bill. "How do you suppose I knew the answer to this fifty per cent proposition. I guess I know what fifty per cent of a dollar is."

"We will let this go at that, Bill," I finally said, "but suppose you bid on a job for which the labor, material, and overhead were all told one hundred dollars, and you charged one hundred and fifty dollars, would you figure that you had fifty per cent profit on that job?"

"Sure," Bill answered. "Figgers is figgers, no matter whether it is poker or business. It works out the same in anything."

"Now listen, Bill," I argued. "Suppose that this job that cost you all told one hundred dollars, was sold for one hundred and fifty, and the customer came in and paid the bill, and that was all you had taken in that day. You come in at five o'clock that night to figure that day's receipts. You look in the drawer, and what do you find there?"

"I find one hundred and fifty dollars," Bill answered, "which is the amount that the customer has paid me for that job."

"Correct," I assented. "Now then, Bill, fifty dollars is thirty-three and one-third per cent of one hundred and fifty dollars, is it not?"

"Sure it is, but all I invested was one hundred dollars, and wound up with one hundred and fifty, didn't I?" said Bill obstinately.

"But, Bill," I explained, "you surely know that you are not figuring profit on what your cost is. By this I mean, that you can not figure profit until you have it."

"Sure not," Bill agreed. "You can not count your chickens till they are hatched."

"Well then, according to your own argument," I went on, "it is not logical to figure percentage of profit till that profit is in your cash drawer."

"Any fool knows that there is no profit till you get it," Bill agreed.

"Well then," I said laughing, "if you can not figure profit till you get it, and you do not get it till it is in your drawer, then you must figure the total which is cost and profit all in one pile."

"That is right," Bill answered.

"Now then, Bill," I reasoned, "you have counted your pile, and found all told one hundred and fifty dollars, didn't you?"

"Sure I did," Bill answered.

"Now then," I continued, "let us separate the profit from the cost, and what do we find?"

By this time, the other fellows, were busy with

pencils scribbling all over the aces and deuces. They were following the argument.

"We find," said Bill, "two piles of money. One pile of one hundred dollars representing the cost, and another pile of fifty dollars representing the profit."

"That is just right," exclaimed Fred and Steve in unison. "We are right on your tail in this argument. Go ahead and argue your heads off."

"So far, so good," I said, feeling greatly encouraged. "Now then, all told, you have one hundred and fifty dollars, of which, fifty dollars, or thirty-three and a third, is profit. What are you kicking about?"

"Gee whiz!" Bill exclaimed impatiently to me. "You have more bone in your head than any man I know. Look here. Here are two piles of money. One pile is a hundred dollars, and the other pile is fifty dollars. For the love of Mike, isn't fifty dollars, fifty per cent of a hundred dollars? I leave this to you fellows. Doggone it, I can't see anything else except that fifty is half of a hundred, and half is fifty per cent."

Just then, Mrs. Higgins spoke up and said, "Bill, you are as wrong as you can be. You insist that fifty is half of a hundred, but the real question is not as you—."

"Aw, rats," said Bill, losing his patience. "Who asked you to butt in? What do you know about percentage?"

"Now, Bill Higgins," Mrs Higgins replied, "you just sit there and keep your fool mouth closed till a lady finishes what she started to say. I was about to say that the question is about a hundred and fifty dollars, not a hundred dollars. The teetotal, do you get me, Bill Higgins, the whole smear amounted to one hundred and fifty dollars, and you made fifty dollars, which is one-third—and one-third is equal to thirty-three and a third. Now you just remember this, Bill, and don't ever argue this again. You are as wrong as you can be, and you think you are a smart business man. If you figure all of your profits on that basis, you are always poorer than you think. You talk about bone in the head, why, Bill Higgins, you are bone from your chest up to your hat. The idea!"

Now, Mr. Reader, just figure this out, and if you figure like Bill Higgins, you are losing money, because you are not earning as much as you think you are. Just get your pencil and paper, and maybe you will have an eye opener which will do you a lot of good. Go to it, and have a little fun with yourself. Do you figure profits on cost, or selling price?

Publishes Very Helpful Book on Automotive Radiator Repairing.

The business of repairing automotive radiators has developed to such an extent that an authoritative textbook on the technique of the work has become a necessity in the sheet metal trade.

In response to this necessity, an exceptionally clear, well written and very helpful volume has been written by F. L. Curfman and T. H. Leet, and published by the F. L. Curfman Manufacturing Company, Maryville, Missouri.

In a significant introduction, the authors declare that: "There has been too much stress placed on tools

and too little credit given to knowledge. A poorly informed workman with the most up-to-date tools is a poor match for an educated mechanic with the crudest of equipment. Modern equipment is needed to meet competition, but knowledge is necessary to continue in business."

The book bears the title of "Manual of Automotive Radiator Construction and Repair," and contains 185 pages with 120 illustrations, most of which are half-tone reproductions from photographs of actual construction and repairing.

Especially praiseworthy is the way in which the book is printed. Its twelve chapters are subdivided into sixty headings printed in black face type so that it is easy quickly to find any particular topic for which the reader may be looking.

The text of the book is set forth in big, comfortable type which puts no strain whatever upon the tired eyes of the mechanic at the close of his day's labor, when he devotes some of his leisure to the study of this excellent book.

Both authors of the book write from long and varied personal experience. Notes have been kept for three years of questions pertaining to different problems which repairmen have met in their work and have been personally answered by F. L. Curfman of the F. L. Curfman Manufacturing Company.

Mr. T. H. Leet, joint author of the book, has been foreman in the repair department of the F. L. Curfman Manufacturing Company for four years and is thoroughly conversant with the theory and practice of automobile radiator construction and repair.

This Manual may be bought for \$2.50 postage prepaid to any address in the United States, from the publishers, F. L. Curfman Manufacturing Company, Maryville, Missouri.

Directors of Illinois Sheet Metal Contractors Meet.

For the purpose of working out a system to increase the membership of the State organization and to set a date and place for the next State convention, the directors of the Sheet Metal Contractors' Association of Illinois held a meeting, December 6th, in Springfield, Illinois.

The meeting was called by J. C. Neuman, State President, and the following officers and directors were present: A. J. Hermsdorfer of Quincy; James Barrett of Alton; Harry Butler of Bloomington; Charles N. Louis of Peoria; George Harms of Peoria; R. Jobst of Peoria; C. J. George of Springfield; and L. A. Denoyer of Chicago, acting president of the Travelers' Auxiliary to the Illinois Sheet Metal Contractors' Association.

The matter of fixing the date and place of the next State convention was discussed and, as soon as the necessary arrangements shall have been completed, definite announcement thereof will be made.

Quality increases price, but Lowers Cost.

"No" spelled Backwards is "On." The way to read "No" is Not from the left, but from the Right.

Iowa Auxiliary Devises Thorough System of Campaign.

A practical example of concentrating the power of an organization upon the accomplishment of a given object is furnished by the Jobbers' and Salesmen's Auxiliary of the Iowa Sheet Metal Contractors' Association.

In a letter sent out to the members of the Auxiliary, C. F. Anderson, Des Moines, Iowa, Secretary of the Iowa Auxiliary, gives the reasons for the campaign and the system for carrying it forward to success.

In part he writes:

"You will readily understand that it is difficult for the members of the Iowa Sheet Metal Contractors' Association to get new members as this must be done by personal solicitation and inasmuch as you are in direct contact with the customers of this territory who are or should be interested in this Association, you are able to present the reasons why the dealer should at once put his energies and influence besides his moral and financial support into the Association.

"Let us, therefore, step forward and live up to the fine opinion that the Association members have formed of the Auxiliary members and obtain the membership which they desire between now and January first and thereby prove again that we who constitute the Auxiliary of the Iowa Association are the liveliest bunch that can be found in this State or any other calling on the sheet metal contractors.

"For your convenience I am enclosing herewith some membership blanks to the Association besides an extra blank for the Auxiliary and bear in mind that we need Auxiliary members besides Association members but that the Association must come before the Auxiliary.

"The State has been divided into districts with a chairman appointed in each district together with list of members in each district and any help you can give to the members in each organization to those dealers in each district who are not already members will be highly appreciated by the members of the Association."

Eleven districts have been formed for the membership campaign and committees have been appointed who are pledged to make thorough canvass for new members in their respective territory. The personnel of the committees and the districts of which they have charge are as follows:

District 1, consisting of the following Counties: Lyon, Sioux, Plymouth, Woodbury, Osceola, O'Brien, Cherokee and Ida.

Committee for District 1: Chairman, J. E. Johnson, Interstate Cornice Works, Sioux City, Iowa; Ray C. Sorsolleil, Sioux City, Iowa; Sioux City Sheet Metal Works, Sioux City, Iowa.

District 2, consisting of the following Counties: Dickinson, Clay, Buena Vista, Sac, Emmett, Palo Alto, Pocahontas, Calhoun, Humboldt, Webster, Wright and Hamilton.

Committee for District 2: Chairman, R. T. Northup, Sanders Furnace Company, Fort Dodge, Iowa; Sanders Furnace Company, Fort Dodge, Iowa; Dahlien-Bownell Company, Fort Dodge, Iowa; Ideal Sheet Metal Works, Fort Dodge, Iowa; Moeller Furnace Company, Fort Dodge, Iowa; Schaeffer Metal Works, Fort Dodge, Iowa; L. W. Bowers, Storm Lake, Iowa; R. J. Peterson, Storm Lake, Iowa; August Mueller, Webster City, Iowa; Eagle Plumbing and Heating Company, Eagle Grove, Iowa; Fort Dodge Furnace Company, Fort Dodge, Iowa.

District 3, consisting of the following Counties: Kosuth, Winnebago, Hancock, Worth, Cerro Gordo, Mitchell, Floyd, Howard, Chicksaw and Winneshiek.

Committee for District 3: Chairman, A. L. Adams, Adams Sheet Metal Works, Mason City, Iowa; Adams Sheet Metal Works, Mason City, Iowa; Metal Products Company, Mason City, Iowa; Britt Sheet Metal Works, Britt, Iowa; Falb and Son, Forest City, Iowa; Clear Lake Metal Works, Clear Lake, Iowa; Aaron Watts, Lime Springs, Iowa; Watts Brothers, Cresco, Iowa; H. F. Thompson, Decorah, Iowa.

District 4, consisting of the following Counties: Franklin, Hardin, Butler, Grundy, Bremer, Black Hawk, Fayette and Buchanan.

Committee for District 4: Chairman, N. A. Lichty, Lichty Metal Products Company, Waterloo, Iowa; Lichty Metal Products Company, Waterloo, Iowa; Waterloo Manufacturing Company, Waterloo, Iowa; Waterloo Hardware Company, Waterloo, Iowa; J. G. Wright, Waterloo, Iowa; C. M. Berkley, Waterloo, Iowa; Moore Manufacturing Company, Waterloo, Iowa; L. O. Johnson, Hampton, Iowa; A. J. Pearce, Iowa Falls, Iowa; C. M. Smith, Oelwein, Iowa.

District 5, consisting of the following Counties: Allamakee, Clayton, Delaware, Dubuque, Jackson and Clinton.

Committee for District 5: Chairman, Charles W. Brouillet, Dubuque, Iowa; Brouillet Sheet Metal Works, Dubuque, Iowa; Justman Tin Shop, Dubuque, Iowa; Geisler Brothers, Dubuque, Iowa; H. G. Scherr, Dubuque, Iowa; Lyons Heating and Ventilating Company, Dubuque, Iowa; F. M. Van Valkenburg and Company, Dubuque, Iowa; R. L. Spellerberg, Dubuque, Iowa; F. C. Luther, Dubuque, Iowa; Ranforth Furnace Company, Dubuque, Iowa; Frank J. Schilling, East Dubuque, Illinois.

District 6, consisting of the following Counties: Benton, Linn, Jones, Iowa, Johnson, Cedar, Scott and Muscatine.

Committee for District 6: Chairman, Frank E. Russell, Cedar Rapids, Iowa; Cedar Rapids Cornice Works, Cedar Rapids, Iowa; J. P. Grissell Cornice Company, Cedar Rapids, Iowa; L. L. Furman and Company, Williamsburg, Iowa.

District 7, consisting of the following Counties: Greene, Boone, Story, Marshall, Tama, Jasper, Poweshiek and Mahaska.

Committee for District 7: Chairman, H. H. Spohr, Marshalltown, Iowa; L. C. Noland, Boone, Iowa; Hanson Plumbing and Heating Company, Boone, Iowa; T. E. Nelson and Company, Boone, Iowa; J. R. Jones, Ames, Iowa; Imperial Furnace Company, Marshalltown, Iowa; Abbott and Son, Marshalltown, Iowa; Leo Banzloff, Marshalltown, Iowa; H. V. Griffith, Grinnell, Iowa.

District 8, consisting of the following Counties: Keokuk, Washington, Louisa, Wapello, Jefferson, Henry, Des Moines, Davis, Van Buren and Lee.

Committee for District 8: Chairman, Sam Bergh, Wayland, Iowa; E. C. Streedbeck, West Hill Tin Shop, Burlington, Iowa.

District 9, consisting of the following Counties: Dallas, Polk, Madison, Warren, Marion, Union, Clarke, Lucas, Monroe, Ringgold, Decatur, Wayne and Appanoose.

Committee for District 9: Chairman, Mr. Schuster, Des Moines Sheet Metal Company, Des Moines, Iowa; Backman Sheet Metal Works, Des Moines, Iowa; St. John and Barquist, Des Moines, Iowa; C. L. Sauer, Des Moines, Iowa; R. H. Schlater, Des Moines, Iowa; Success Heater and Manufacturing Company, Des Moines, Iowa; D. L. Griffith, Knoxville, Iowa.

District 10, consisting of the following Counties: Monona, Harrison, Crawford, Shelby, Carroll, Audubon and Guthrie.

Committee for District 10: Chairman, Peter Hanson, Missouri Valley, Iowa; L. T. Peterson, Denison, Iowa.

District 11, consisting of the following Counties: Pottawattamie, Cass, Adair, Mills, Montgomery, Adams, Fremont, Page and Taylor.

Committee for District 11: Chairman, W. B. Collins, Atlantic Sheet Metal Works, Atlantic, Iowa; Charles Eckhardt, Avoca, Iowa; Henry G. Clawson, Walnut, Iowa; A. G. Anderson, Shenandoah, Iowa; Harry Lyman, Clarinda, Iowa.

Sheet Metal Worker Is Awarded Gold Medal.

At the meeting of the American Society of Mechanical Engineers in New York City, December 7th, the gold medal of the organization was awarded to Hjalmar G. Carlson, a sheet metal worker of Worcester, Massachusetts.

The award was made in recognition of his inven-

tion of a device which enabled American overseas forces to receive adequate ammunition supplies at a critical moment of the world war.

"Carlson's invention," the society's official statement said, "made possible the production of 30,000 drawn steel holster casings used principally as a component of 75 millimeter high explosive shells and also extensively in gas shells and bombs, as an aid to victory in the world war."

Shut-off and Needle Valve Are Separate in New Torch.

A distinct advantage, which will be appreciated by the practical mechanic, has been added to the Turner Gasolene - Kerosene Torch, made by the Turner Brass Works, Sycamore, Illinois.

This advantage consists of an improvement whereby the shut-off and needle valve are made separate. Cross Section View of Turner Gasolene-Kerosene Torch. In the new design of the Turner Gasolene-Kerosene Torch, the upper needle is used for a regulating or adjusting needle, while the lower needle is used only to shut off the torch.

It is claimed for this new construction that it positively eliminates the forcing or enlarging of the orifice when shutting off the torch, as all the strain is taken off the orifice or delicate part of the torch.

Another commendable feature of this Turner Gasolene-Kerosene Torch is that the baffle in the burner tube generates the low grade gasolene or kerosene to a hot dry gas. The benefit of this lies in the fact that dry gas takes on more oxygen and, therefore, the torch is able to generate more heat on less fuel.

At the inlet a flared tube is used which syphons the correct proportion of air regardless of the size of the flame.

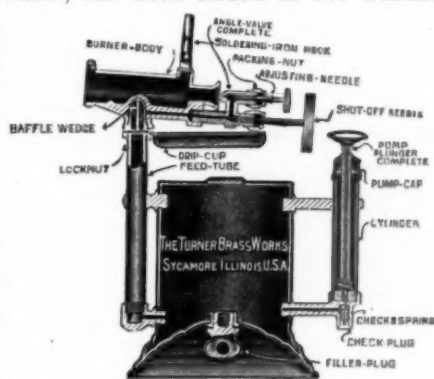
The air pump on the new line of Turner Gasolene-Kerosene Torch is made on the principle of a parachute. The leather on the plunger is perfectly loose in the cylinder, preventing it from wearing and allowing the air to pass freely on the upward stroke.

Due to its construction, however, the leather plunger flares out on the downward stroke and forces a larger volume of air into the tank.

The Turner-non-leaking filler plug and improved pump cap and former are used on the new line. The drip cup is made of stamped metal, copper plated, and of sufficient size.

Instructive literature and other details concerning this new Turner Gasolene-Kerosene Torch may be secured by writing to the Turner Brass Works, Sycamore, Illinois.

Results are footrules and yardsticks that Measure Values. They are scales that Weigh Merit.



Cross Section View of Turner Gasolene-Kerosene Torch.

Columbus, Ohio, Sheet Metal Local Issues Jolly Invitation.

It is easy to understand why the Master Sheet Metal Contractors' Association of Columbus, Ohio, is one of the most enterprising, lively, and thriving Locals in the State of Ohio.

The members of this organization practice good cheer as well as cooperation. They are jolly as well as clever. They keep themselves in the pink of condition by seasoning their work with pleasure. Hence, they get the cream of the business in their trade.

As a sample of the way they do things, the following jolly invitation is reproduced:

LET'S GO -

HERE IS SOMETHING WHICH WILL GALVANIZE THEM INTO ACTION

THE ANNUAL MEETING AND DINNER DANCE OF THE MASTER SHEET METAL CONTRACTORS ASSOCIATION

IS SCHEDULED FOR MONDAY NIGHT DEC. 12TH 1921 - 6 P.M.

PLACE - ELKS CLUB.

WE. LAMNECK - CHAIRMAN
GEO. J. RIPPEL, HARVEY HASLETT
AND JOHN SCHILLING - COMMITTEE

SAY THINGS ARE STACKED FOR A HOT TIME.

DINNER - THE BEST EVER
DANCING - HEBER'S
JAZZ FIENDS IN A SELECTED
LINE OF SYNCOPATION.
A CARD PARTY FOR THOSE
WHO PREFER TO SHUFFLE THIER FINGERS
INSTEAD OF THIER FEET. PRIZES FOR THE
LUCKY
A FEW SHORT AND SNAPPY
TALKS BY CORRESPONDENCE SCHOOL
GRADUATES IN ELOCUTION
SINGING - FLOWERS
PUNCH - A GOOD TIME
ALL FOR THE ASSESSMENT
OF \$2.50 PER PLATE INCLUDING
WAR TAX AND EVERYTHING BUT A TAXI HOME.

GET RESERVATIONS IN NOW FOR
YOUR LADY AND YOURSELF.

THE TURNER BRASS WORKS, SYCAMORE, ILLINOIS, U.S.A.

THERE IS A PRIZE WALTZ FOR THE DANCING FOOLS.

Describes Standard Seam Sheet Copper Roofing and Flashings.

Book No. 5 of the excellent series of publications distributed to the trade by C. G. Hussey & Company, makers of copper sheets, plates and rolls, deals with standing seam sheet copper roofing and flashings.

It is ably written by William Neubecker, one of the foremost authorities on practical sheet metal craftsmanship in America. The book is helpfully illustrated and explains how to do the work of copper roofing in the most satisfactory manner.

Copies of Book No. 5 on Standing Seam Sheet Copper Roofing and Flashing can be obtained by writing to C. G. Hussey & Company, Pittsburgh, Pennsylvania.

Bureau of Mines Plans to Lessen Cost of Zinc Production.

Investigations conducted by the United States Bureau of Mines in the course of a special effort to aid the mineral industries to re-establish themselves on a safe business basis to meet the renewed foreign competition and the changed conditions of supply and demand of the post-war period point the way to the possible saving of vast sums through the application of improved methods in the production of various mineral materials, according to H. Foster Bain, Director, in his annual report just made to the Secretary of the Interior.

The report relating to zinc and copper is as follows:

The cost of production of zinc, with the standard retort process, is now so high that it endangers the position of zinc as a cheap metal.

Plans have been formulated for an investigation of proposed methods for the electrothermic metallurgy of zinc, with a view to increasing the recovery of metal and lowering production costs.

The results of an investigation regarding the losses of fines in the tailings of zinc metals in the Wisconsin district indicate that the use of concentrating tables of a certain type will greatly increase recovery.

It is estimated that this practice would have added about \$1,000,000 annually to the value of zinc output in this district had it been in operation in 1917.

Important results in the utilization of the low-grade and complex ores of copper, lead, silver and zinc, which constitute a great problem in the mineral development of Utah, Colorado and other Rocky Mountain States, are promised by the utilization of the chloride volatilization process.

The sulphur dioxide leaching of porphyry copper ores of Arizona holds the promise of important developments for the mineral industry in the Southwest.

Notes and Queries.

Gasolene Tank Screw Caps.

From John Pikna, Riverside Drive Sheet Metal Works, McHenry, Illinois.

Please advise me where I can buy gasolene tank screw caps made out of sheet iron.

Ans.—Wilson and Bennett Manufacturing Company, 65th Place and South Menard Avenue, Chicago, Illinois.

Metal Road Signs.

From J. H. Benne, Crete, Nebraska.

Where can I buy metal road signs?

Ans.—Fred J. Meyers Manufacturing Company, Hamilton, Ohio; Wear Well Sign Company, 1509 Clybourn Avenue, Chicago, Illinois; P. F. Cordell and Company, 647 West Madison Street, Chicago, Illinois; Zero Marx Sign Works, 126 North Peoria Street, Chicago, Illinois.

Address of H. Franke Steel Range Company.

From Stove Dealers' Supply Company, 310 Chestnut Street, Milwaukee, Wisconsin.

Will you please inform us where the H. Franke Steel Range Company is located?

Ans.—Harvard and East 103d Street, Cleveland, Ohio.

Address of E. Miller and Company.

From J. F. Moser, Pierceton, Indiana.

Kindly give me the address of E. Miller and Company, manufacturers of lamp burners.

Ans.—Meriden, Connecticut.

Stamping Machine.

From Andersen Hardware, 1000 State Street, Racine, Wisconsin.

Where can we buy a stamping machine to stamp eight gauge iron and lighter, up to three inches wide?

Ans.—Joseph T. Ryerson and Son, 2558 West 16th Street, and E. W. Bliss Company, 122 South Michigan Avenue; both of Chicago, Illinois.

"Sanico" Ranges.

From F. S. Cole, 75 North Park Avenue, Oshkosh, Wisconsin.

Will you be so kind as to advise me who manufactures the Sanico line of ranges?

Ans.—American Range and Foundry Company, Minneapolis, Minnesota.

Screws With Nickel Plated Heads.

From Apollo Metal Works, La Salle, Illinois.

Please advise us where we can obtain screws with nickel plated heads.

Ans.—Corbin Screw Corporation, New Britain, Connecticut; National Screw and Tack Corporation, 326 West Madison Street, Chicago, Illinois.

"Sun" and Other Lamp Burners.

From L. C. McCartney, Box 934, Lincoln, Nebraska.

Kindly tell me who manufactures lamp burners, especially the "Sun."

Ans.—Edw. Miller and Company, Meriden, Connecticut, manufactures the "Sun" burner. Best Light Company, 477 Second, N. E., Canton, Ohio; Bridgeport Brass Company, Bridgeport, Connecticut; and Wheeling Stamping Company, Wheeling, West Virginia, make lamp burners.

Thermostats.

From T. C. Miles, Bethesda, Ohio.

Will you please tell me who manufactures thermostats?

Ans.—American Thermostat Company, 226 Jelliff Avenue, Newark, New Jersey; Beers Brothers Manufacturing Company, Rochester, New York; Dahl Manufacturing Company, Minneapolis, Minnesota; Electric Heat Regulator Company, 2753 Fourth Avenue, South, Minneapolis, Minnesota; Jewell Manufacturing Company, Auburn, New York; Johnson Service Company, 149 Michigan, Milwaukee, Wisconsin; Minneapolis Heat Regulator Company, 2753 Fourth Avenue, South, Minneapolis, Minnesota.

Wood Workers' Magazine.

From George F. Meyer, Van Dyne, Wisconsin.

Where can I get a wood workers' magazine?

Ans.—Wood Turning, 505 Montgomery Building, Milwaukee, Wisconsin; The Woodworker, 701 Wulsin Building, Indianapolis, Indiana; Woodworkers' Record, 1124 Wilson Avenue, Chicago, Illinois.

A cubic foot of water heated to the temperature of steam under seventy pounds pressure contains as much energy as a pound of gunpowder.

Illustrations of New Patents

Watch This Page. Keep Yourself Informed Concerning Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.

1,395,444. Grate. William L. Mersfelder, Detroit, Mich., assignor to Detroit Stove Works, Detroit, Mich., a Corporation of Michigan. Filed Jan. 15, 1921.

1,395,495. Scrubbing-Brush. Jeremiah Francis Holland, Beaver Dam, Wis. Filed Mar. 9, 1920.

1,395,499. Bottle-Capping Tool. Mahlon O. Kasson, Chicago, Ill. Filed Sept. 27, 1920.

1,395,510. Drafting-Tool. Carl F. Minion, Cincinnati, Ohio. Filed Oct. 4, 1920.

1,395,523. Attachment for Stoves. Erastus W. Rogers, Durham, N. C. Filed May 10, 1920.

1,395,528. Socket-Wrench. Frank Ignacio Silva, Wailuku, Hawaii. Filed Nov. 26, 1920.

1,395,554. Lid-Holder for Cooking Utensils and Receptacles. William W. Brown, Medford, Ore. Filed Mar. 25, 1921.

1,395,585. Socket-Wrench. Thomas S. Kizer, Chattanooga, Okla. Filed Sept. 3, 1920.

1,395,652. Scouring Device. Andrew Motter, Buffalo, N. Y. Filed Feb. 23, 1921.

1,395,656. Wrench. Henry Schlutz, Pittsburgh, Pa., assignor of two-fifths to Jacob L. Knoedler, Opaton, Pa. Filed Apr. 20, 1920.

1,395,758. Operating Means for Hinged Tools. Alexander Maszcyk, Milwaukee, Wis. Filed Mar. 15, 1920.

1,395,783. Bucket Clothes-Washer. Jane A. Wright, Bordentown, N. J. Filed Apr. 26, 1918.

1,395,784. Damper. Joseph Alsasser, Chicago, Ill. Filed May 15, 1920.

1,395,799. Combined Burner Structure for Gas-Stoves. Emil L. Claus, Milwaukee, Wis. Filed Mar. 21, 1919.

1,395,800. Wrench. Edwin W. Cochran, Catawba, N. C. Filed May 24, 1921.

1,395,883. Radiator. Oscar E. Werneke, St. Paul, Minn. Filed June 7, 1916.

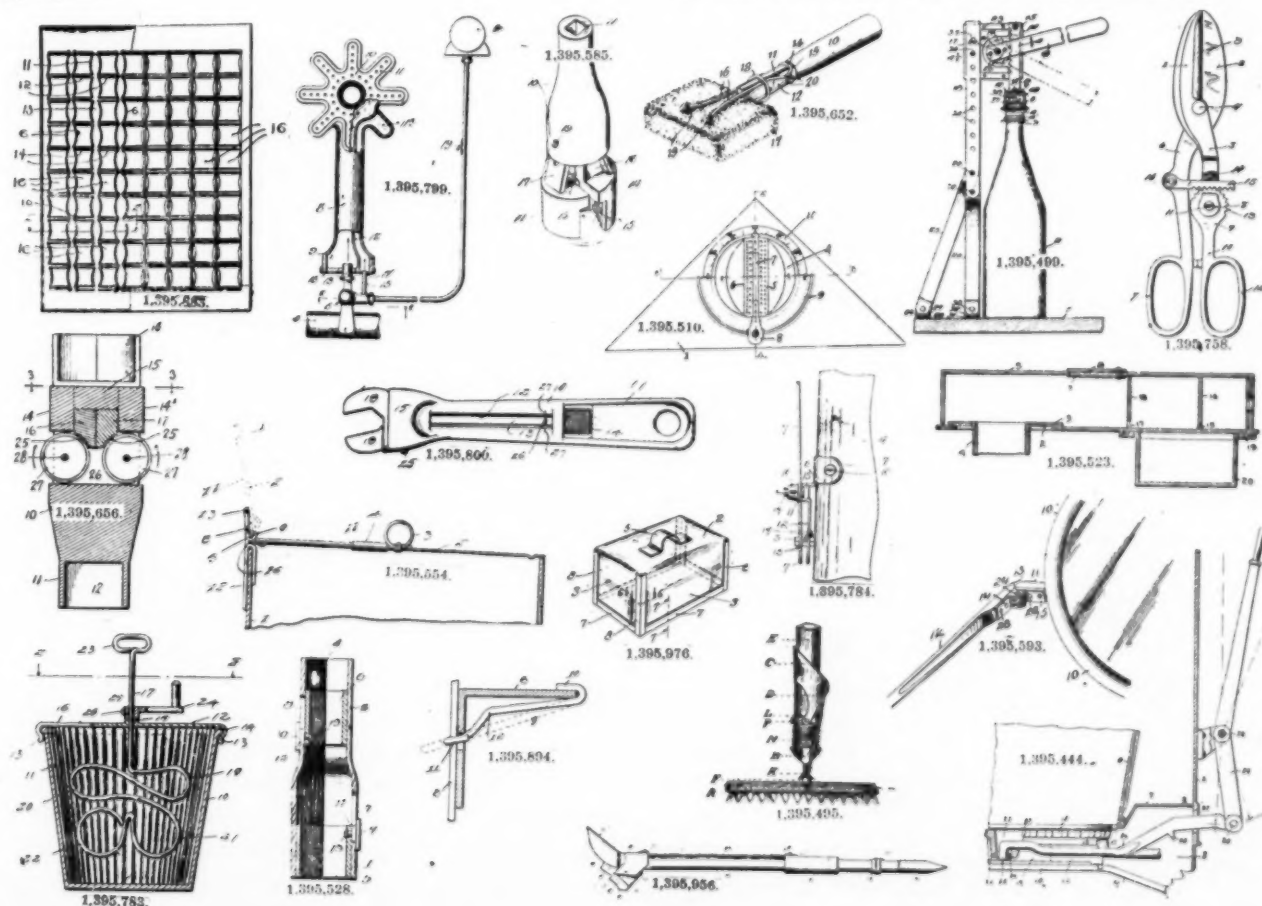
1,395,894. Fence-Staple. Charles A. Beckwith, Shullsburg, Wis. Filed Oct. 29, 1920.

1,395,956. Spike-Puller. James B. Gillis, Roy J. Rhodes, and Hollis J. Lowe, Salisbury, Md. Filed Feb. 21, 1920, Serial No. 360,377. Renewed July 23, 1921.

1,395,976. Sanitary Food-Cover. James W. Riley, Los Angeles, Calif. Filed Nov. 16, 1920.

No incompetent proprietor ever succeeds in keeping for long the kind of help he most needs, the competent kind.

When you hear a man complaining of having a family to support, the chances are that he lives on the fruits of his wife's labor at the washtub.



Weekly Report of the Markets

General Conditions in the Steel Industry. Review of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

BIG STEEL COMBINE IS LIKELY TO MATERIALIZE.

Reports from Pittsburgh indicate that the prospects are bright for a merger of seven big independent steel companies, with ingot capacity slightly less than that of the leading interest.

It is quite probable that a merger may be an accomplished fact within a few months that would embrace the Lackawanna Steel Company, the Midvale Steel & Ordnance Company, the Inland Steel Company, the Republic Iron & Steel Company, the Youngstown Sheet & Tube Company, the Brier Hill Steel Company, and the Steel Tube Company of America.

The aggregate capacity of ingot steel of these seven interests is slightly less than 20,000,000 tons yearly, and compares with a capacity of 22,500,000 tons, which the United Steel Corporation is commonly credited with and 52,500,000 tons as the rated capacity of the entire country.

The average rate of operation of the steel mills throughout the country was fairly well maintained during the week, but the tendency was lower.

The distribution of production between the light and heavy products is still unequal, the sheet, tin, pipe and wire mills running well above 50 per cent, and the bar, rails, plate and shape mills doing less than 40 per cent.

During the past two or three weeks there has been a decided slump in the steel export trade of this country, which, for the most part, is seasonal, but this reason will not account for all of it, inasmuch as it developed after a very material increase.

Of the millions of dollars' worth of iron and steel goods shipped from this country in 1920, and which were left on the piers and in the warehouses of the ports of the world through cancellation or non-payment of the buyer, some still remains, especially in South America.

For months past Japan has been our best buyer, and in point of tonnage China has been a close second, with large rail orders.

The associated steelmakers of Great Britain recently relieved its members of their obligation to observe the price schedule adopted for export business, and open and free competition now rules.

Steel.

Prices tend lower and although both the independents and the American Sheet & Tin Plate Company consolidated sheet prices at 2.4 and 2.25 cents, respectively, for black, galvanized and blue annealed, these prices have yet to be tested and the probability is that they will be found to be too high.

Because of this advance, one composite price of finished steel products this week, as published, stands at 2.135 cents, as against 2.009 last week, and another

composite price of both iron and steel products advanced from \$34.60 to \$34.65 a ton.

A pig iron average price is now \$19.56 a gross ton, as compared with \$10.64 last week.

Galvanized barbed wire is lower at 3.40 cents, Pittsburgh, and in the semi-finished steel products skelp is down to 1.50 cents.

There is also some doubt as to whether the present price of \$4.75 a box for tin plate will stand inasmuch as the Welsh mills have invaded the Pacific coast market recently at a dollar under this price.

Due to the fact that consumers are more and more resigned to the idea that freight rate reductions are some time off, they are placing orders in a little better volume and although the market has been far from active during the week, orders are the largest in several weeks.

Copper.

Copper is being bought for first quarter 1922 delivery in good volume. Prices are hardening in the export market and the whole tendency is for increasing strength as excess supplies are going into consumption.

Lake is quoted at 13.50 cents to 13.75 cents a pound and electrolytic 13½ to 13¾ cents for immediate and 1st quarter 1922 delivery, with prices as high as 14.00 cents for second quarter delivery.

Late reports on November business indicate sales as high as 170,000,000 pounds, or a total for the three months ended November 30th of about 400,000,000 pounds.

In these three months alone sales exceeded new production by about 290,000,000 pounds.

Sentiment both among producers and consumers has undergone a radical change in the past month. Improvement in the copper situation is exceeding expectations.

Very little copper of any kind is held by second hands in the East, but there are some accumulations in the Ohio Valley and at other points further west.

These lots are available to consumers in that territory at slightly less than producers' delivered prices from the East.

For first quarter delivery there are offerings at 13¾ cents, f. o. b. refinery and sales were made Tuesday of this week at 13¾ cents refinery for May and June shipment. Lake copper remains quiet but firm at 13¾ cents delivered for prompt shipment.

Copper for first quarter delivery (1922) is being bought in good volume, and the policy on the part of the large producers to refuse all but January business fully discloses their view of the tendency of prices in the near future.

In some quarters orders from abroad are reported in volume equal to the demand from domestic consumers. Wall Street operators put out unsubstantiated

bearish reports Monday of the present week as to present demand, evidently with a view to depressing the copper stock market.

In line with the stiffening of copper prices, Chicago quotations on copper sheet, mill base, increased $\frac{1}{8}$ cent per pound and is now quoted at 21 cents per pound.

Tin.

Prices of tin in Chicago were advanced during the week. Pig tin increased from $33\frac{1}{2}$ cents per pound to $34\frac{3}{4}$ cents, and bar tin from $34\frac{1}{2}$ cents per pound to $36\frac{3}{4}$ cents per pound.

The consumption of tin is improving in this country, especially in the tin plate industry and will probably reach an average of 4,000 tons a month in the early part of next year.

The present rate of production will be maintained and perhaps increased as the demand gets better, and while the price of tin in London may be further advanced through the operations of a large speculative group the situation and outlook are not such as would justify a much higher level than at present except on the score of sterling exchange.

Solder.

In the Chicago market, solder advanced 50 cents per hundred pounds. Prices now in effect are as follows: Warranted, 50-50, per hundred pounds, \$20.50; Commercial, 45-55, per hundred pounds, \$19.00; and Plumbers', per hundred pounds, \$17.75.

Lead.

There are offerings of prompt and December shipment at 4.40 cents, East St. Louis basis, mostly of outside lots.

Producers are mostly pretty closely sold up for this month, but it is possible to buy January in a limited way at the same basis, though it is not freely offered.

Demand is not as active as a few days ago, but there is no material change in the general character of the market, which is in a strong position.

Zinc.

The recent bulge in zinc buying is being maintained and prices continue upward.

Chicago price for zinc in slabs advanced 20 points, from \$5.15 per hundred pounds to \$5.35.

Sellers report that this demand is from domestic consumers only, that there is no pick up in export trade and that shipments of 90 tons abroad early in the week was a special high-grade brand.

Joplin advices state that while zinc ore buying last week was nearly double average purchases early in the year, it was little more than half of that of the previous week.

The purchase of 7,500 tons represents 1,500 tons more than the output. Within a month over 20,000 tons more than the output has been sold and is being rapidly moved.

Sheets.

While sheet demand has had some ups and downs lately almost from week to week the general trend has been downward by a comparison covering two or three months, and the present outlook is that there will be some further decrease in the next few weeks.

The decrease, however, is purely seasonal. There was the demand for sheets for use on the farm, particularly in the South, which naturally fell in late Summer and early Fall.

There was a fairly heavy demand for sheet for building material, including metal lath, etc., and ultimate consumption is naturally tending to decrease for the Winter.

There is also some decline in the sheet demand from the automobile trade as it is late for closed cars and early for open cars.

Tin Plate.

The tin plate market remains quite steady on the \$4.75 basis, Pittsburgh, this figure as a first half price having been put out November 3rd, and enough time has now elapsed to indicate that the price will probably hold.

There is some shading, it appears, but only on the part of mills that do not have a regular clientele, the shading covering what the large producers consider is an unimportant tonnage.

Tin mill operations are decidedly heavier at this time than would be expected on the basis of the general situation and the time of year.

The relatively heavy operation is accounted for by the practice of the leading interest and some of the larger independents of entering business with large customers according to their requirements to April 1st, whereby some tin plate is being rolled now to customers' specifications for first quarter shipment.

Apart from this there is a very fair running demand, for shipment now.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$13.50 to \$14.00; old iron axles, \$18.50 to \$19.00; steel springs, \$13.75 to \$14.25; No. 1 wrought iron, \$12.50 to \$13.00; No. 1 cast, \$12.00 to \$12.50; all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 7 cents; light brass, 4 cents; lead, $3\frac{1}{4}$ cents; zinc, 2 cents; cast aluminum, 9 cents.

Pig Iron.

In the Chicago district, first quarter inquiry for pig iron and bookings show a distinct increase, but prices continue somewhat weak.

According to the market report of the Matthew Addy Company, Cincinnati, Ohio, there are no speculative purchases whatever. Every purchase is being made practically for immediate shipment and immediate consumption.

It looks very much as if melters of iron were selling their finished goods first and buying their iron to cover afterward. But, as compared with this time ninety days ago, business is exactly 100 per cent better.

Rogers, Brown & Company, Cincinnati, Ohio, declare that the chief interest at present is being manifested by the radiator and furnace manufacturers.

Their melt is maintained and plants throughout the country are showing an active interest in first quarter business. Inquiries are now out for tonnages ranging from 1,000 to 9,000 tons for that delivery.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

FIG IRON.

Chicago Foundry	21 00 to 22 00
Southern Fdy. No. 2, 24 65 to 25 67	
Lake Sup. Charcoal	31 50 to 33 50
Malleable	21 00 to 22 00

FIRST QUALITY BRIGHT TIN PLATES.

	Per Box
IC 14x20 112 sheets	\$ 9 65
IX 14x20	11 05
IXX 14x20	12 30
IXXX 14x20	13 65
IXXXX 14x20	15 05
IC 20x28	19 30
IX 20x28	22 10
IXX 20x28	24 60
IXXX 20x28	27 30
IXXXX 20x28	30 10

COKE PLATES

Cokes, 180 lbs.	20x28 \$11 80
Cokes, 200 lbs.	20x28 12 00
Cokes, 214 lbs.	IC 20x28 12 35
Cokes, 270 lbs.	IX 20x28 14 10

BLUE ANNEALED SHEETS.

Base	per 100 lbs. \$3 35
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ONE PASS COLD ROLLED BLACK.

No. 18-20	per 100 lbs. \$3 95
No. 22-24	per 100 lbs. 4 00
No. 26	per 100 lbs. 4 05
No. 27	per 100 lbs. 4 10
No. 28	per 100 lbs. 4 15
No. 29	per 100 lbs. 4 25

GALVANIZED

No. 16	per 100 lbs. \$4 40
No. 18-20	per 100 lbs. 4 55
No. 22-24	per 100 lbs. 4 70
No. 26	per 100 lbs. 4 85
No. 27	per 100 lbs. 5 00
No. 28	per 100 lbs. 5 15
No. 29	per 100 lbs. 5 35

BAR SOLDER.

Warranted, 50-50	per 100 lbs. \$20 50
Commercial, 45-55	per 100 lbs. 19 00
Plumbers	per 100 lbs. 17 75

ZINC.

In Slabs	\$5 35
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SHEET ZINC.

Cask lots	10c
Less than cask lots	10 1/4-10 3/4c

COPPER.

Copper Sheet, mill base	\$0 21
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LEAD.

American Pig	\$4 85
Bar	5 60
Sheet	
Full coils	per 100 lbs. \$7 80
Cut coils	per 100 lbs. 8 05

TIN.

Pig tin	34 1/2c
Bar tin	36 1/2c

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

Coopers'	
Barton's	Net
White's	Net

ALARM CLOCKS.

Big Ben and Baby Ben	per doz. \$28 80
America	13 55
Tattoo	28 50

AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder	18%
Loaded with Smokeless Powder	18%
Winchester.	
Smokeless Repeater Grade	10 & 4%
Smokeless Leader Grade	10 & 4%
Black Powder	10 & 4%
U. M. C.	
Nitro Club	10 & 4%
Arrow	10 & 4%
New Club	10 & 4%
Gun Wads—per 1000.	
Winchester 7-3 gauge	10 & 7 1/4%
" 9-10 gauge	10 & 7 1/4%
" 11-28 gauge	10 & 7 1/4%

Powder.	Each
DuPont's Sporting, kegs	\$11 25
" " 1/4 kegs	3 10
DuPont's Canisters, 1-lb.	55
" " kegs	22 00
" " 1/4 kegs	5 75
" " canisters	1 00
Hercules "E.C." kegs	22 50
Hercules "Infallible," 25 can drums	22 00
Hercules "Infallible," 10-can drums	9 00
Hercules "E.C." and "Infallible," canisters	1 00
Hercules W. A. 30 Cal. Rifle, canisters	1 25
Hercules Sharpshooter Rifle, canisters	1 25
Hercules Bullseye Revolver, canisters	1 00

ASBESTOS.

Paper up to 1/16	10c per lb.
Millboard 3/32 to 1/4	10 1/2c per lb.
Corrugated Paper (250 sq. ft.)	\$6.50 per 100 lbs.
Rollboard	11c per lb.

AUGERS.

Boring Machine	40 @ 40 & 10%
Carpenter's Nut	50%
Hollow.	
Bonney's	per doz. \$30 00
Post Hole.	
Iwan's Post Hole and Well	30 and 5%
Vaughan's, 4 to 9 in., without handles	per doz. \$14 00
Ship.	
Ford's	Net

AWLS.

Brad.	
No. 3 Handled	per doz. \$0 65
No. 1050 Handled	" 1 40
Patent awt'd, 1 to 4	" 85

HARNESSES.

Common	per doz. \$1 05
Patent	" 1 00
Peg.	
Shouldered	" 1 60
Patented	" 75
Scratch.	
No. 18, socket Handled	per doz. \$2 50
No. 344 Goodell-Pratt, list less	35-40%
No. 7 Stanley	per doz. \$2 25

AXES.

First Quality, Single Bitted (unhandled), 3 to 4 lb., per doz.	14 50
Good Quality, Single Bitted, same weight, per doz.	13 00

BAGS, PAPER, NAIL.

Pounds	10 16 30 25
Per 1000	\$5 00 6 50 7 50 9 00

BALANCES, SPRING.

Universal.	
Sight Spring	List less 25%
Straight	List less 25%

BARS, WRECKING.

V. & B. No. 12	\$0 45
V. & B. No. 24	0 75
V. & B. No. 324	0 80
V. & B. No. 30	0 85
V. & B. No. 330	0 90

BEATERS.

Carpet.	Per doz.
No. 7 Tinned Spring Wire	\$1 10
No. 8 Spring Wire Cop- pered	1 50
No. 9 Preston	1 75

BELLS.

Call.	
3-inch Nickeled Rotary Bell, Bronzed base	per doz. \$5 50

Cow.	
Kentucky	33 1/4%

Door.	Per doz.
New Departure Automatic	Net

Rotary.	
3 -in. Old Copper Bell	Net
3 -in. Old Copper Bell, fancy	Net
3 -in. Nickeled Steel Bell	Net
3 1/4 -in. Nickeled Steel Bell	Net

Hand.	
Hand Bell, polished	List plus 15-10%
White Metal	List plus 15-10%
Nickel Plated	List plus 10%
Swiss	Net

Miscellaneous.	
Church and School, steel alloys	30%
Farm, lbs.	40 50 75 100
Each	\$2 00 3 75 5 50 7 25

BEVELS, TEE.

Stanley's Rosewood handle, new list	Nets
Stanley iron handle	Nets

BINDING CLOTH.

Zinc	55%
Brass	40%
Brass, plated	60%

BITS.

Auger.	
Jennings Pattern	Net
Ford Car	List plus 5%
Ford's Ship	" 5%
Irwin	35%
Russell Jennings	Plus 15%
Clark's Expansive	33 1/4%
Steer's " Small list	\$22 00 5%
" " Large	\$26 00 5%
Irwin Car	35%
Ford's Ship Auger pattern Car	List plus 5%
Center	10%

Countersink.

No. 18 Wheeler's	per doz. \$2 25
No. 20	" " 3 00
American Snailhead	" 1 75
" Rose	" 2 00
" Flat	" 1 40
Mahe's Flat	" 1 60
" Snail	" 1 90

Dowel.

Russel Jennings	plus 20%
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Gimlet.

Standard Double Cut Gross	\$3 40
Nail Metal Single Cut	Gross \$4 00—\$5 00

Reamer.

Standard Square	Doz. \$2 50
American Octagon	" 2 50

Screw Driver.

No. 1 Common	Each 18c
No. 26 Stanley	Each 70c

BLADES, SAW.

Wood.	
Atkins 30-in.	
No. 1	\$ 40 25
No. 2	\$8 90 \$9 45 \$5 40
Disston 30-in.	
No. 1	\$ 45 65 25
No. 2	\$9 45 \$10 95 \$9 45

BLOCKS.

Wooden	20%
Patent	20%

BOARDS.

Stove.	Per doz.
26x26, wood lined	\$14 45
28x28, " "	10 95
30x30, " "	10 00
26x26, paper lined	\$ 8 15
28x28, " "	9 10
30x30, " "	10 80

Wash.	
No. 760, Banner Globe (single)	per doz. \$5 25
No. 652, Banner Globe (single)	per doz. 6 75
No. 301, Brass King, per doz.	8 25
No. 300, Single—Plain Pump	6 25

BOLTS.

Carriage, Machine, etc.	
Carriage, cut thread, 1/2x8 and sizes smaller and shorter	60%
Carriage sizes larger and longer than 1/2x8	50-10%
Machine, 1/4x4 and sizes smaller and shorter	60-10%
Machine, sizes larger and longer than 1/4x4	50-5%
Stove	75-10%

Mortise, Door.

Gem, iron	5%
Gem, bronze plated	5%

Barrel.

Cast	Net
Wrought	"
Wrought, bronzed	"

Flush.		WroughtNet		Spring.		Wrought "		Wrought, heavy..... "		Square.		Wrought "		BOXES.		Mail. No.. 2 4 10		Per doz. \$18 00 \$23 00 \$29 00		Cast Iron.		Per doz.\$9 50		Mitre.		Stanley's.....Net Prices		Stearns, No. 2...per doz. \$48 00																																																																																																																																																																																																																																																																																																																											
BRACES, RATCHET.		Goodell-Pratt No. 408.....\$4 60		" " No. 410..... 4 80		" " No. 412..... 5 00		V. & B. No. 444 8 in..... 4 85		V. & B. No. 333 8 in..... 4 30		V. & B. No. 222 8 in..... 4 00		V. & B. No. 111 8 in..... 3 50		V. & B. No. 11 8 in..... 3 05		BURRS, RIVETING.		Copper Burrs only..30% above list		Tianers' Iron Burrs only.....Net		BUTTS.		Steel, antique copper or dull brass finish—case lots—		3½x3½...per dozen pairs \$2 75		4x4..... " " 2 80		Heavy Bevel steel inside sets, case lots—	per dozen sets 7 50		Steel bit keyed front door sets, each 1 30		Wrought brass bit keyed front door sets, each... 3 25		Cylinder front door sets, each 7 00		CALIPERS.		DoubleNet		Inside and Outside..... "		Wing "		CANS.		Milk.		Ohio.		Gals. 5 8 10		Each\$3 65 \$4 45 \$4 70		Gem.		Gals. 5 8 10		Each\$3 85 \$4 95 \$5 20		Jersey or Holstein.		Gals. 5 8 10		Each\$4 15 \$5 60 \$5 90		CAN OPENERS.		See openers.		CARRIERS.		Hay.		Diamond, Regular...each, Nets		Diamond, Sling..... " "		CARTRIDGES.		See Ammunition.		CASTERS.		Standard—Ball Bearing,	50 & 100%		Bed40%		Common Plate.		Brass Wheel15%		Iron and porcelain wheels, new list50%		Philadelphia Plate, new list50%		Martin's40%		CATCHERS, GRASS.		No. 160S.....per doz. \$12 25		No. 165S..... " 14 01		CEMENT, FURNACE.		American Seal, 5 lb. cans, net \$0 45		" " 10 lb. cans, " 90		" " 25 lb. cans, " 1 87		Asbestos, 5 lb. cans..... 45		Pecora, 5 lb. cans..... 45		" 10 lb. cans..... 90		" 25 lb. cans..... 1 97																																																																																																																																																																																																																									
Brenst Chains.		With Slide....doz. pairs, \$5 50		Without Slide... " 5 05		Doubleslack " " 9 35		With Covert Snaps " " 6 35		Picture Chains.		Light brass, 2 ft..per doz. 1 25		Heavy brass, 3 ft. " 1 75		Sash Chain. (Morton's)		Steel, per 100 ft.		0\$2 50		2 3 10		1 3 60		Champion Metal.		0R 5 40		2R 5 60		1R 7 75		Champion Metal.—Extra Heavy.		1H\$9 50		Cable Sash Chains.		Steel.....List Net Plus 15%		CHALK, CARPENTERS'.		Blueper gro. \$2 00		Red 2 00		White 1 80		Common White School Crayon 0 30		CHIMNEY TOPS.		In bags.....per bag \$1 80		CHECKS, DOOR.		CorbinNet list		RusswinNet list		CHISELS.		Cold.		Good quality, ¼ in., each \$0 44		" ½ in., " 0 28		Diamond Point.		V. & B. No. 15, ¼ in..... 0 23		V. & B. No. 15, ½ in..... 0 48		FIRMER BEVELLED.		Berg's (Swedish).		¼-inch.....per doz. \$ 4 45		1 " 7 15		1½ " 10 15		2 " 17 15		2½ " 26 95		Round Nose.		V. & B. No. 65, ¼ in..... 0 32		V. & B. No. 65, ½ in..... 0 44		SOCKET FIRMER.		Berg's (Swedish).		¼-inch.....per doz., \$11 95		1 " 16 75		1½ " 22 95		2 " 35 95		Cape.		V. & B. No. 50, ¼ in..... 0 29		V. & B. No. 50, ½ in..... 0 64		CHUCKS, DRILL.		Goodell's, for Goodell's Screw Drivers.....List less 35-40%		Yankee, for Yankee Screw Drivers\$6 00		CHURNS.		Anti-Bent Wood,		Gal. 5 7 10		Each\$3 00 4 60 4 85		Belle, Barrel.....65 & 7½%		Common Dash,		Gal. 5 7		Per doz.....\$17 00 19 00		CLAMPS.		Adjustable.		Martin's30%		No. 63, Screw.....30%		Cabinet.		Screw20%		Carpenters'.		Steel Bar...List price plus 20%		Carriage Makers'.		2½-inch.....per doz. \$ 7 00		5 " 14 00		8 " 28 00		12 " 42 00		Quilt Frame.		No. 30, Ball and Socket.		2¼-in. head...per gross \$13 00		No. 50 Ball and Socket.		2½-in. head...per gross 14 50		Hose.		Sherman's, brass, ¼-inch, per doz.....\$0 48		Double, brass, ¼-inch, per doz. 1 20		Saw Filers.		Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25.																																																																																																																																																																			
CLAWS, TACK.		Wood hdl. No. 10...per doz. \$1 15		Forged steel, wood hdl. " 2 15		Solid steel " " 3 25		Giant " " " 50		CLEAVERS.		Family.		Beatty's, inch.. 7 8 9 10		Per doz..\$25 10 27 50 30 50 33 50		CLEAVISES.		Malleable10c lb.		CLIPPERS.		Bolt (Carolus).		No. 0.....\$2 50		No. 1..... 3 25		No. 3..... 4 25		CLIPS.		Axle65@5%		Damper.		Standardper doz. 70c		Troy 38c		Hame 50c		COLLARS, STOVE PIPE.		Lacquered.		Inches 5 6 7		Fancy pattern, per doz.....65c 75c \$1 00		COMPASSES.		Carpenters'15%		COPPERS—Soldering.		Pointed Roofing.		3 lb. and heavier...per lb. 40c		2 lb. 48c		2½ lb. 45c		1½ lb. 55c		1 lb. 60c		CORD.		Picture.		White Wire.....60 & 50%		Sash.		Spot, No. 7.....per lb. 65c		Common, No. 7..... 40c		COTTERS, SPRING.		All sizes.....87½%		COUPLINGS, HOSE.		Brass.....per doz. \$2 25		CRADLES, GRAIN.		Morgan's Grapevine, per doz. \$45 00		CUT-OFFS.		Standard gauge.....35%		26 gauge.....20%		CUTTERS.		Glass.		Red Devil.....Net		Meat.		Enterprise—Nos. 5 10 12		Each\$2 50 \$4 25 \$3 75		" Nos. 22 23		" \$5 50 \$8 50		PIPE.		Saunders, Nos. 1 2 3		Each\$1 85 2 75 6 75		SLAW AND KRAUT.		Per doz.		4-knife Kraut.....\$20 00-55 00		3-knife Kraut, 8x27 in. 12 00-12 00		1-knife Slaw..... 2 50		2-knife Slaw..... 3 00		Washer 11 00		DAMPERS, STOVE PIPE.		Diamond.		6-inch.....per doz. \$1 50		DIGGERS.		Post Hole.		Eureka.....per doz. \$15 75		Iwan's Split Handle (Eureka)		4-ft. Handle...per doz. 15 00		7-ft. Handle...per doz. 30 00		Iwan's Hercules pattern, per doz..... 18 00		Dividers, Wing25%		DRILLS.		Bench.		Blacksmiths' Twist (New List)40%		Brenst.		Millers Falls No. 12, per doz.\$52 00		Millers Falls No. 112, per doz. 32 00		Hand.		Goodell's Automatic.		No. 01.....each \$1 00		No. 02..... " 2 00		Goodell-Pratt No. 4½, each 3 00		Goodell-Pratt No. 379. " 4 00		Reciprocating.		Goodell's 2 20		DRIVERS, SCREW.		StandardNets		Lock Ferrule "		Clark's Interchangeable... "		Goodell's Spiral..... "		Yankee Ratchet "		" Spiral "		EAVES TROUGH.		75-10% off Standard List.		MilcorNew		ELBOWS—Conductor Pipe.		Galvanized Steel, Tin and Terna		Plain Round or Round Corrugated		2 to 6 inch, Std. gauge...40-10-5%		2 to 6 inch, 26 gauge...40-10-5%		2 to 6 inch, 24 gauge...15-10-5%		MilcorNew		Square Corrugated.		Standard gauge.....45-10-5%		26 gauge.....30-10-5%		MilcorNew		ELBOWS—Stove Pipe.		1-piece Corrugated, Uniform.		Doa		5-inch\$1 40		6-inch 1 50		7-inch 2 00		Uniform, Collar Adjustable.		Doa		5-inch\$1 90		6-inch 3 00		7-inch 2 40		ENAMEL.		Per doz		Black Silk Air Drying.		No. 1, ¼ pt. can with brush\$1 90		No. 2, 1 pt. can with brush 3 00		Wire Screen Enamel.		Black Silk (Black only).		Per doz		¼ pt. friction top can...\$2 00		1 pt. friction top can... 3 00		1 qt. friction top can... 5 40		FACES, WOOD.		50% off list.		FASTENERS, STORM SASH.		Shroeder'sper doz. \$1 50		Sensible " 2 00		FENCING.		Lawn fence, single space,		36-inch\$ 9 10		Lawn fence, single space,		42-inch 10 20		Lawn fence, double space,		36-inch 12 50		Lawn fence, double space,		42-inch 12 70		Field fence, 26-inch, No. 10 top and bottom 12 filling 26 00		Same, 6 filling..... 32 00		Field fence, 32-inch, No. 10 top and bottom 12 filling 30 00		Same, 6 filling..... 39 00		FILES AND RASPS.		Heller's (American)60-50%		American40-50%		Arcade50-100%		Black Diamond.....50-50%		Eagle50-100%		Great Western.....50-100%		Kearney & Foot.....50-100%		McClellan50-100%		Nicholson50-100%		Simonds60%		J. Barton Smith.....50-10-30%		X FNet List		FIRE POTS.		Clayton & Lambert's—		each\$4 00@5 00		Gate City.....each 6 35		Gemeach \$5 75@ 8 50	

GALVANIZED WARE.		HANDLES.		Screw Hook and Strap.		KETTLES.	
Per doz.		Agricultural Tool.		6 to 12 in.per 100 lbs. \$7 75		Brass18%	
Pails (Competition), 5-qt.\$2 00		4 1/2-inch, plain....per doz. \$3 50		14 to 20 in. " " 7 50		Cauldron40&5%	
10-qt. 3 35		Auger.		22 to 36 in. " " 7 35		Copperper lb. 37	
12-qt. 3 50		Common Assorted, per doz. \$0 75		Screw Hook and Eye.		Maslin40&10%	
14-qt. 3 80		Pratt's Adjustable, Nos.		1/2 in.per doz. pair \$2 00		Sugar50%	
Wash tubs, No. 1. 6 50		1 & 2, per doz. 6 00		1/2 in. " " 3 50		KNIVES.	
No. 2. 7 50		Ives' Adjustable...per set 1 35		1/2 in. " " 5 00		Beet Topping.	
No. 3. 8 50		Axe.		HOES.		Clyde, 9-in. Scimitar Blade,	
GARAGE DOOR HARDWARE.		Hickory, No. 1....per doz. 4 00		GardenNet		doz.28%	
StanleyAll net		Hickory, No. 2.... 2 50		HOOKS.		California35%	
GAUGES.		1st quality, second growth 6 00		Awning, No. 60.....Net		Butcher.	
Cream Fall.		Special white, 2nd growth. 5 00		Belt.		Beechwood Handles, 6-inch	
Fairmountper doz. \$3 75		Chisel.		Brown's70&5%		blade35%	
Marking, Mortise, etc.....		Hickory, Tanged, Firmer.		Jones'65&5%		Beechwood Handles, 7-inch	
.....Nets		Assortedper doz. 55c		Box.		blade35%	
Wire.		Hickory, Socket Firmer.		No. \$ 10 12		Beechwood Handles, 8-inch	
Disston's25%		Assortedper doz. 70c		Each\$0 29 0 77 0 86		blade35%	
GIMLETS.		Coal Pick.....40%		Bush.		Cooper's Hoop35%	
Discount.....85% and 10%		Drifting Pick.....40%		Common Axe Handle,		Corn.	
GLASS.		File, assorted.....per doz. 30c		per doz.....\$20 00		Clipper35%	
Single Strength, A and B,		Hammer and Hatchet.		Chain.		Disston's No. 1.....35%	
all sizes.....81%		No. 1, per doz.....\$0 80		Inch. 1/4 5/16 3/8 7/16 1/2		Earle's35%	
Double Strength, A and B,		Second growth hickory, per		Pr. 100 \$7 60-\$10 9 75 11 50 12 40		Woodford35%	
all sizes.....83%		doz. 1 40		Clothes Line.		Drawing.	
GLOVES.		Hay and Manure Fork, Han-		Japanned ...per doz. 35c@1 00		Standard35%	
Per doz.		dies, Strap and Ferrule...		Galvanized .. " 65c@2 25		Adjustable35%	
6-oz. knit wrist gloves.....\$1 00	per doz. \$7 00		Conductor.		Barton's Carpenters'.....35%	
8-oz. knit wrist gloves..... 1 30		Screw Driver.		Conductor hooks.....20-10%		Hay.	
10-oz. knit wrist gloves..... 1 45		Assortedeach 6c		MilcorNet		Iwan's Solid Socket.....35%	
GLUE.		Shovel and Spade.....Net		Corn.		Heath's35%	
Bulk.		HANGERS.		Common, riveted, red, per dz. Net		Iwan's, Sickle Edge.....35%	
B Amber.....per lb. 35c		Door.		Little Giant..... " "		Iwan's Imp'd Serrated.....35%	
A white..... " 40c		MatchlessNet		Conductor.		Hedge.	
H. S. Amber..... " 35c		ReliableNet		Conductor hooks.....20-10%		Challenge35%	
Liquid.		Richards25%		MilcorNet		Disston's No. 1.....35%	
Army & Navy.....40%		Garage Door.		Grass.		Mincing.	
Le Page's—		(See Garage Door Hdw.)		Common Nos. 1 3 5 7		Common, Single35%	
List "A".....37 1/2%		Conductor Pipe.		Per doz..\$4 25 3 25 2 40 3 50		Common, Double35%	
List "B".....35 %		Iwan's Perfection.....50%		Hammock.		Streeter, 4-blade35%	
List "C".....35 %		Milcor Perfection.....Net		With plate.....per doz. \$1 00		Streeter, 8-blade35%	
GREASE, AXLE.		Eaves Trough.		With screw..... " 95		Putty.	
Wood Boxes.		Steel hangers.....30%		Picture50%&50%&10%		Common35%	
Fraser'sper gro. \$13 00		Triple twist wire.....10%		Potato and Manure.....Nets		Landers35%	
Hub Lightning..... 7 50		Milcor Eclipse.....Net		ROSE.		Scraping.	
Wood Pails.		Milcor Triplex.....Net		1/2-inch molded reel13 1/2c		Beech Handle35%	
Fraser's, 15 lb. \$1.00; 25 lb. \$1.50		Milcor Milwaukee.....Net		1/2-inch 3 ply duck.....15 1/2c		Lander's35%	
Hub Lightning, 15 lb. 90c; 25 lb.		HASPS.		1/2-inch 4 ply duck.....16c		DOOR.	
\$1.21 each.		Hinge, Wrought, with staples.Net		1/2-inch 5 ply multiple.....10 1/2c		Mineralper doz. \$2 00	
GRINDSTONES.		HATCHETS.		HUSKERS.		Porcelain " 2 40	
Family.		Per doz.		Nos. B E		Jet " 3 50	
Inches 7 8 10 12		Size No. 2 extra quality		Per doz.New Nets		LADDERS.	
Prices on application.		broad\$19 00		No. 59.....per doz. New Nets		Common, per ft.....23c	
Mounted.		Competitive Grade..... 13 00 up		Plane.		Common, with Shelf, add 10c.	
Ball Bearing... 1 2 3		No. 2 Warranted Shingling 14 35		Wood Bench...Add 10% to list		IXL34c	
Prices on application.		Competitive Forged 5 50		IRONS.		Challenge, 6 to 9 ft.....55c	
GUNS.		HAY RACK BRACKETS.		Charcoalper doz. \$11.00		10 to 16 ft.....60c	
Iver Johnson Champion Single		Wenzelman's No. 1		Common, polished, per		LANTERNS.	
Barrel Shot Guns.....Net		per doz. sets \$13 00		100 lbs. 7 75		Per doz.	
Double Barrel, Hammerless... "		Wenzelman's No. 2		No. 70 Asbestos.....\$1 50 net		Monarch tin, hot blast....\$ 9 50	
HAFTS, AWL.		per doz. sets 19 20		No. 100 " 1 75 net		Diets No. 2 cold blast.... 14 50	
Brad.		HINGES.		Common, nickel plated.... 3 25		Best tubular 9 50	
Commonper doz. \$0 35		Blind.		Mrs. Pott's,		Competition lanterns No. 0	
Peg.		Clark's Gravity		No. 50 J. Enterprise, per set Nets		tubular 7 50	
Patent, plain top. " 40		No. 1.....per set 45c		No. 55 J. " " "		LEATHER, LACE.	
Patent, leather top " 30		No. 2..... " 38c		No. 50 T. " " "		Rawhide 1/2-inch100 ft. \$2 50	
Sewing.		Gate.		JACKS.		1/2-inch " 4 40	
Common " 24		Clarks..... 1 2 3		Richard's No. 1..per doz. \$15 50		LEATHERS, PUMP.	
Patent " 55		Hgs & Ltch, ea. 35c 1 10 2 40		Oliver.		Valve and Plunger.....Net	
HAMMERS, HANDLED.		Hinges only—		Nos. 0 00		LEVELS.	
Each, net		Upper\$1 25		Each\$0 61 \$0 80		Disston, No. 25 Asst.....\$32 01	
Blacksmiths, Hand, No. 0,		Lower 1 55		Standard.		" No. 18, 20 in. each 1 52	
26 oz.\$1 35		Latches only—		Nos. 1 2		" No. 22, 24 in. each 2 40	
Engineers', No. 1, 26 oz. 1 35		No. 1.....each 38c		Each\$0 60 \$1 00		" Shafting, 6 in. 19 50	
Farriers', No. 7, 7 oz. 1 41		No. 2..... " 28c		R-W		" 6 in. gr. glass 24 20	
Machinists', No. 1, 7 oz. 1 08		Screen Door.		Big Lift.....40%		" No. 1 Asst. 5 75	
Nail.		1751—3x3doz. \$2 00		Tiger40%		" No. 9 Asst. 12 40	
Vanadium, No. 4 1/2, 16 oz.		1752—2 1/2x3 1/2 " 1 95		Wagon.		" 24-36 in.each 1 03	
each 1 55		Spring.		Richard's No. 1..per doz. \$15 50		" 36-30 in.each 1 00	
V. & B., No. 1 1/2, 16 oz.		Chicago Add 10% to list		Oliver.		LIFTERS.	
each 1 18		Gem25%		Nos. 0 00		Stove Cover.	
Garden City, No. 1 1/2, 16		Matchless40%		Each\$0 61 \$0 80		Copperedper gro. \$5 00	
oz., each 94		New Idea.....per gross \$6 90		Standard.		Alaska " 4 75	
Tinner's Riveting, No. 1, 8		Wrought Iron.		Nos. 1 2		Transom.	
oz., each 20		Per 100 pairs with screws:		Each\$0 60 \$1 00		Payson's55%	
Shoe, Steel, No. 1, 13 oz.,		Light Strap Hinges, No. 3 \$12 00		Big Lift.....40%		LINES.	
each 73		Heavy Strap Hinges, No. 4 15 75		Tiger40%		Juteper lb. 24c	
Tack.		Light T Hinges...No. 3 13 10				Sisal " 25c	
Magnetic.		Heavy T Hinges...No. 4 20 00				Cotton " 25c	
No. 6, each..... 1 00		Extra Heavy T Hinges,				Braided Cotton..... " 53c	
HAMMERS, HEAVY.	No. 4 21 50					
Farriers'20%							
Masons'.							
Single and Double Face....50%							

LINING, STOVE. Bricksper crate 42c	NIPPERS. End Cutting. Berg's (Swedish) In. 5 6 Per dozen.....\$12 00 15 20	PARERS. Apple. Goodell'sper doz. \$10 80 Turntable " 11 40 White Mountain " 8 40 Reading No. 75 " 11 40	Lineman's Side Cutting. Berg's (Swedish), In. 6 7 8 Blk. Pol. Face, doz.\$10 70 20 00 23 25
LOOKS. Barn Door. No. 60 Stearns...per doz. \$12 00 No. 50 " " " 24 00	End and Diagonal Cutting. Berg's (Swedish) In. 5 6 Per dozen.....\$10 05 13 00	Potato. Goodell's Saratoga, 10 1/4 in., doz. 6 50 Goodell's Saratoga, 5 in., doz. 5 50	Long Nose Side Cutting. Berg's (Swedish) In. 5 6 Blk. Pol. Face, doz. \$12 25 15 20
MACHINES. Siveting. Stearns No. 1...per doz. \$16 00	HOOF. Heller's40&10% V. & B., No. 52, each.....\$2 25	PICKS. Adze Eye Ore.....22 1/2% Drifting and Poll Picks.....22 1/2% Plumbs, Railroad22 1/2% Surface22 1/2%	Flat and Round Nose. Berg's (Swedish) Flat, In. 4 6 8 Blk. Pol. Face, Doz.\$8 90 13 35 19 65 Berg's (Swedish) Round, In. 4 6 8 Blk. Pol. Face, Doz.\$11 15 16 30 23 35
Tenoning. No. 50 Peace's Spoke, each \$16 00	NOZZLES. Hose. Magicper doz. \$9 50 Diamond " 5 75	PINCERS. Carpenters', cast steel, No. 6 8 10 12 Each \$0 55 \$0 72 \$0 93 \$1 08 Blacksmiths', No. 10.....\$0 96 Heller'sList plus 10%	POINTS, GLAZIERS. No. 1, 2 and 3.....per doz. 75c
MAIL BOXES. See Boxes.	NUTS, HOT PRESSED. Square Tapped. \$2.41 off per 100 lbs.	PINS. Clothes. Common, per box of 5 gro. \$0 95	POINTERS, SPOKE. Stearns' No. 1.....per doz. \$10 00 " No. 2..... " 12 00
MALLETS. Carpenters'. Fibre Head, No. 2 per doz. \$16 50 " No. 3 " 19 50 " No. 4 " 28 50	Hexagon Tapped. \$2.41 off per 100 lbs.	PIPE. Conductor. Plain Round and Round Corrugated. 29 Gauge45% 28 "45% 26 "35% 24 "10% Square Corrugated A and B and Octagon. 29 Gauge40% 28 "40% 26 "30% 24 "10%	POKERS, STOVE. Wrt Steel, str't or bent,per doz. \$0 75 Nickel Plated, coil han's " 1 10
Round Hickoryper doz. \$3 00—5 00 Round Lig-numvitae " 6 25—10 50 Square Hickory " 3 50—5 50 Square Lig-numvitae " 1 00—12 00	OILERS. Chase Pattern. Brass and Copper.....10% Zinc20% Railroad. Coppered33 1/2% Steel. Copper Plated50-10-5%	PICKET. Fluted, 15-in.....per doz. \$1 10 Fluted, 21-in..... " 1 60 Spiral " 1 90	POLISH. Metal. Per doz. Black Silk No. 60—4 oz. \$ 1 50 Black Silk No. 70—1 pt. " 2 00 Black Silk No. 80—1 qt. " 5 00 Black Silk No. 90—1 gal. " 12 00
FINNERS'. Hickoryper doz. \$2 25	OPENERS. Can. Delmonicoper doz. \$1 30 Never Slip..... " 65	PLAIN ROUND AND ROUND CORRUGATED. 29 Gauge45% 28 "45% 26 "35% 24 "10%	STOVE. Black Silk No. 5 paste, 5 oz. can\$ 1 20 Black Silk No. 10 paste, 1/2 lb. can..... 2 00 Black Silk No. 10A paste, (fireproof), 1 1/2 lb. can.. 1 50 Black Silk No. 15 paste, 1 lb. can 3 00 Black Silk No. 20 paste, 5 lb. can..... 11 40 Black Silk No. 6 liquid, 6 oz. can 1 25 Black Silk No. 8 liquid, 1/2 pt. can..... 2 00 Black Silk No. 12 liquid, 1 pt. can..... 3 00
MATS. Door. National Rigid.....5&10&5% Acme Steel Flexible.....50%	Crate. V. & B. ...per doz. \$7 25-11 00	PRICES FOR GALVANIZED TONCAN METAL, GENUINE O. H. IRON, LYON-MORE METAL AND KEYSTONE C. B. ON APPLICATION.	PRESSES, FRUIT AND JELLY. Enterprise Manufacturing Co. 25%
MAULS. Wood Choppers'. Lake Superior & Oregon pat.40&5%	OUTFITS, COBBLING. Combinationper doz. \$16 00 Economy " 8 50 Family " 14 50	PLAIN ROUND AND ROUND CORRUGATED. 29 Gauge40% 26 "35% 24 "10%	PRUNERS. Dixson's Pole.....per doz. \$18 00 Water's Improved, per doz. 60%
MEASURES. Galvanized, doz.....Nets Japanned, doz.....Nets	PAIS. Cream. 14-qt. without gaugeper doz. \$9 50 18-qt. without gauge,per doz. 11 00 20-qt. without gauge,per doz. 11 75	SQUARE CORRUGATED A AND B AND OCTAGON. 29 Gauge40% 28 "40% 26 "30% 24 "10%	PULLERS. Cork. Daisyeach \$3 10 Phoenix " 1 40 Quick and Easy..... " 3 70
MITRES. Galvanized steel mitres, end caps, end pieces, outlets....30% MilcorNet	Stock. Galv. qts. 14 16 18 20 Per doz. \$9 75 10 75 12 75 14 50	STEVE. 26 gauge, 5 inch E. C. nested\$14 50 26 gauge, 6 inch E. C. nested 15 50 26 gauge, 7 inch E. C. nested 17 50 28 gauge, 5 inch E. C. nested 12 50 28 gauge, 6 inch E. C. nested 13 50 28 gauge, 7 inch E. C. nested 15 50 30 gauge, 5 inch E. C. nested 11 00 30 gauge, 6 inch E. C. nested 12 00 30 gauge, 7 inch E. C. nested 14 00 T-Joint Made up, 6-inchper 100 \$40 00	PULLEYS. Awning—Jap'd10% Clothes Line10%
MOPS. Cotton, Star (Cut Ends). Pounds 12' 15' 18' 24'-3-oz. Per doz. \$4 00 4 25 5 50 7 00 Enterprise16% Parker50&5%	Water. Galv. qts. 10 12 14 Per doz. \$5 75 6 50 7 25	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	QUICK AND EASY. Never-Slip 17 00
NAILS. Out Steel.....\$4 25 Out Iron..... 4 45	WOOD. Cable, 3-Hoop...per doz. Nets Cable, 3-Hoop.... " Nets Cedar, 3-Hoop, brass " Nets	PORTICO ELBOWS. Standard Gauge Conductor Pipe, plain or corrugated. Not Nested60 & 10% Nested solid60 & 15%	IRON FORK. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
WIRE. Common 3 65	PANS. DrippingNet	STEVE. 26 gauge, 5 inch E. C. nested\$14 50 26 gauge, 6 inch E. C. nested 15 50 26 gauge, 7 inch E. C. nested 17 50 28 gauge, 5 inch E. C. nested 12 50 28 gauge, 6 inch E. C. nested 13 50 28 gauge, 7 inch E. C. nested 15 50 30 gauge, 5 inch E. C. nested 11 00 30 gauge, 6 inch E. C. nested 12 00 30 gauge, 7 inch E. C. nested 14 00 T-Joint Made up, 6-inchper 100 \$40 00	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
Cement Coated. Small Lots..... 4 20	Fry. CommonNets Acme "	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
Horsehoe. Ausable55&5% Capewell15% Perfect55&5% Putnam20&5% Star30&5%	Roasting. Paxton, Nos. 1 2 3 4 Per doz.Nets Neverburn "	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
Picture. Brass Heads.....25%	Savory, No. 200..per doz. \$8 40	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
Brads50&5% FurnitureList plus 15%	PAPER. Roofing. Per square. Major, 1-ply\$1 23 " 2-ply 2 24 " 3-ply 3 65 Red Rosin.....per ton \$111 45	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
NAIL FULLERS. See Pullers.	Sand and Emery. No. 1 per ream, best grade \$5 40 No. 1, per ream, cheaper grade 4 25	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
NAIL SETS. See Sets.	NETTING, POULTRY. Galvanized before weaving...50% Galvanized after weaving...40%	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00
NETTING, POULTRY. Galvanized before weaving...50% Galvanized after weaving...40%	NETTING, POULTRY. Galvanized before weaving...50% Galvanized after weaving...40%	STANDARD GAUGE. Crated and nested.....60-25% Crated, not nested.....60-20%	IRON WHEEL. Iron Wheel, 5-in. per doz. \$3 50 Wood Wheel, 6-in. " 2 65 Wood Wheel, 6-in., pass knot 3 00

PATTY. Commercial Putty, 100-lb. kits \$4 75	SAWS. Butchers'. Atkins No. 2, 14-in. \$12 20 " No. 2, 18-in. 12 70 " No. 2, 22-in. 15 25 " No. 7, 16-in. 15 20 " No. 7, 20-in. 17 20 " No. 7, 24-in. 21 40 " No. 7, 28-in. 21 40 Disston's No. 2, 14-in. 12 20 " No. 2, 18-in. 12 70 " No. 2, 22-in. 15 25 " No. 7, 16-in. 15 20 " No. 7, 20-in. 17 20 " No. 7, 24-in. 21 35 " No. 7, 28-in. 21 00	SMTS. Nail. Square head.....per doz. 1 24 Cup point, knurled " 1 75 Rivet. Farmers'per doz. 2 50 Tinnies' 2-4 5 75 " 6-8 8 75	SNAPS, HARNESS. Covered SpringAdd 30% Judd's Pattern Add \$2 1-5% to list SNATHS. Double Ring, Bush...per doz. \$9 75 Patent Loop, Bush... " 10 00 Patent Loop, Grass. " 8 75
RAIL. Barn Door. Matchless, 1-in. 50 Matchless, 1 1/4-in. 75 Storm King 50 Sliding Door. Bronzed wrought iron, per ft. 2 1/4c	Compass. Atkins No. 2, 10-in. \$ 4 95 " No. 10, 10-in. 5 10 " Blades, No. 2, 10 in. 3 95 " " No. 2, 10 in. 3 00 Disston's No. 20 Jackson. 4 00 " No. 40 Sampson 2 50 " No. 2 & 77, 10-in. 6 05 " No. 3, 10-in. 6 80	Saw. Atkins No. 10.....per doz. \$5 20 " No. 12..... " 6 20 Disston's Monarch " 9 90 " No. 2..... " 13 20 " No. 12..... " 13 20 Leach's " 30 Nash's Hand " 3 15 Nash's X-cut " 4 20 Stillman's Lever... " 1 20 Stillman's X-cut... " 2 50 Whiting Pattern, " 7 50 No. 21 Eccentric Anvil, Hand No. 295, N. P. Morrill Pat- tern " 14 50	SNIPS, TINNERS'. Clover Leaf40&10% National40&10% Star50% MilcorNet SPRINGS, DOOR. Perfect. Nos. 2 3 4 5 6 7 Per doz. 45c 50c 55c 65c 80c 90c Reliance. Light Medium Heavy Per doz. \$1 80 2 40 3 75 Torrey'sper doz. 1 65
RAKES. Garden. Per doz. Steel, Bow, 12-in. Teeth...\$2 50 Steel, Bow, 14-inch " ... 3 25 Malleable Iron, 12-in. " ... 4 75 Malleable Iron, 14-in. " ... 5 00 Hay. Wood, 10 Teeth.....\$4 00 Lawn. 10 Teethper doz. 5 50	Cross-Cut. Atkins No. 231, 4-ft. 2 70 " No. 231, 6-ft. 4 10 " No. 231, 8-ft. 5 45 Disston's No. 230, 4-ft. 2 15 " No. 230, 6-ft. 4 15 " No. 230, 8-ft. 10 65	SHARPENERS, SKATE. Diamondper doz. \$1 60 Perfect 1 20	SPRINKLERS, LAWN. Stearns No. 1.....per doz. \$11 50
RAZORS—SAFETY. Gilletteper doz. \$45 00 Auto Strip 45 00 Sem 8 00 Sem (3 doz. lots) " ... 2 40 Ever Ready 2 40 Ever Ready (3 ds. lots) " ... 2 00	Flooring. Atkins No. 95, 16-in. 19 95 " No. 95, 20-in. 21 85 Disston's D19, 16-in. 24 50 " D19, 20-in. 31 00	SHEARS Per Doz. Nickel Plated, Straight, 8" \$13 80 " " " 14 85 " " " 16 80 Japanned, Straight 11 00 " " " 13 40 " " " 15 80	SQUARES. Steel and Iron.....Net (Add for bluing, \$2.00 per doz. net) Mitre Try Try and Bevel..... Try and Miter..... Fox'sper doz. \$5 00 Winterbottom's10%
RAZORS—STRAIGHT.	Hand and Rip. Atkins No. 54, 20-in. 17 75 " No. 54, 26-in. 23 10 " No. 52, 16-in. 16 45 " No. 52, 20-in. 20 80 " No. 52, 24-in. 24 20 " No. 52, 28-in. 28 60 " No. 52, 30-in. 31 95 Disston's No. 7, 20-in. 19 20 " No. 7, 22-in. 25 40 " No. 3, 18-in. 17 55 " No. 3, 20-in. 20 75 " No. 3, 24-in. 24 40 " No. 3, 28-in. 28 50 " No. 3, 30-in. 32 95	SHEAVES, SLIDING DOOR. Common. Inches 2 4 5 Per set\$1 40 1 75 2 40 Hatfield's. Per set \$1 80 2 10 2 75 25	SQUEEZERS, LEMON. Common Wood.....per doz. \$9 70 Porcelain Lined, Wood " 1 25 Boss, malleable iron " 1 20 Iron frame por'a bowl " 1 00 Iron frame, glass bowl " 2 25 Little Giant, tin'd iron " 4 00 Drum, japanned ... " 2 00 Drum, nickel plated " 4 50
RAZOR STROPS. Star (Honing)50%	Keyhole. Atkins No. 1, complete... 2 80 " No. 2, complete... 3 25 Disston's No. 5, complete 2 25 " No. 10, complete 2 70 " No. 35, complete 5 75	SHIELDS. Expansion Bolt Shields.....60%	STAPLES. Blind. Barbedper lb. 21 @ 23c Butler, Tub " 16 @ 19c Fence— Polishedper 100 lbs. \$5 45 Galvanized " 6 15 Netting. Galvanizedper 100 lbs. 6 50 Wrought. Wrought Staples, Hasps and Staples, Hasps, Hooks and Staples, and Hooks and Staples50&10% Extra heavy35%
REGISTERS. Cast Iron30% Steel and Semi-Steel.....30% Raceboard30% Adjustable Ceiling Ventilators 30%	Miter Box. Atkins No. 1, 4x20..... 29 70 " No. 1, 5x22..... 34 55 " No. 1, 6x23..... 38 35 Disston's No. 4, 4x20-in. 26 15 " No. 4, 5x22-in. 42 25 " No. 4, 6x22-in. 47 20	SHELLERS, CORN. Unionper doz. \$6 75	STEEL YARD. Discount 25%.
REGISTER FACES. Japanned, Bronzed and Plated. 4x 6 to 14x14.....30% 14x14 to 32x42.....50%	Pruning. Atkins No. 20, 12-in. 7 70 " No. 10, 16-in. 16 50 Disston's No. 20..... 13 75	SHINGLES. Per Square Zinc (Illinois)\$15 00	STONES. Hindostanper lb. New Nets More Grit " " Washita " "
REVOLVERS. Over Johnson Safety Automatic HammerNet Hammerless C. J. Model 199..... "	Wood. Atkins No. 202..... 8 50 " No. 213..... 10 05 " No. 205..... 15 05 " No. 1599..... 18 40 Disston's No. 111, 30-in. 22 20 " No. 47, 30-in. 20 25 " No. 47, 32-in. 20 80	SHOES. Conductor60%	Emery. No. 126.....per doz. New Nets
RIDGE ROLL. Galvanized. Crated70-25% Wired70-25-5% MilcorNet	SCISSORS. Star60%	SHOT—See Ammunition.	Oil—Mounted. Arkansas Hard No. 7.....per doz. New Nets Arkansas Soft " " Washita No. 717 " "
RINGS AND RINGERS. Fall. Copper2 1/4-in. 2-in. Per doz.....\$1 40 \$1 65 Rea's Improved Self- Piercing copper, doz. 3 40 Steel, per doz. 1 50 1 80	SCOOPS. Hubbard Western Pattern Riveted. Size A B C D 1.. \$16 75 14 00 15 25 14 45 4.. 17 85 17 10 18 25 15 60 6.. 18 65 17 85 17 10 16 35	SHOVELS AND SPADES. Coal. Hubbard's No. A B C D 1 \$16 00 15 10 14 45 13 70 2 15 35 15 60 14 85 14 10 3 16 75 16 00 15 25 14 45 4 17 10 16 35 16 60 14 85	Oil—Unmounted. Arkansas Hard per lb. New Nets Arkansas Soft. " " Lilly White. " " Queer Creek. " " Washita " "
Reg. Blair's Rings.....per doz. \$ 75 Blair's Ringers..... " 1 00 Brown's Ringers..... " 72 Brown's Ringers..... " 1 00 Hill's Ringers..... " 1 00 Hill's Ring, boxes " 72 Major Rings " 60 Perfect Ringers... " 1 50 Wolverine Rings... " 1 10 Wolverine Ringers " 1 10	SCRAPERS. Box. Triangular, No. 6 per doz. \$6 25 Road. Cubic ft. 7 5 2 With runners, ea. \$7 00 6 50 6 20	Post Drains & Ditching. Hubbard's Size A B C 14" 17 15 16 40 15 65 16" 17 50 17 75 16 00 18" 17 85 17 10 16 25 20" 18 20 17 45 16 70 22" 18 55 17 80 17 05	Seythe. Black Diamond per gro. New Nets Crescent " " Green Mountain " " LaMolle " " Extra Quinne- bog " " Red End " "
Fruit Jar. Whiteper lb. 30	SCREEN DOOR HINGES. Cast irongross \$13 00 Steel " 9 50	Snow. Hubbard Special. Long Handle\$10 00 D-Handle 11 00 Sidewalk Scraper 6 50	STOPPS, BENCH. No. 10 Morrill pat- ternper doz. \$11 00 No. 11 Stearns pat- tern " 10 00 No. 15 Smith pattern " 7 90
Key. Split, round.....per doz. \$8 17 Split, square..... " 23 Ball, round..... " 40	SCREWS. Bench. Iron, ins. 1 1 1/4 1 1/2 " \$6 22 7 57 9 45 10 80 Wood, white maple, per doz. 6 00 Hand—Wood50% Hand Rail22% Jack30% Lag or Coach—all sizes, gimlet pointed60% Saw—Centennial, Nos. 1 2 3 4 Per doz.....47c 55c 75c 90c	Alaska Steel. D-Handleper doz. \$2 50 Long Handle " 3 00	STOPPERS, FLUE. Commonper doz. \$1 10 Gem, flat, No. 3... " 1 00 Gem, No. 1..... " 1 10
RIVETS. Copper Belt....Add 15% to list Coppered Iron30% Tinnies'30% Same.....per lb. \$8 17 Slotted Clinch per doz. 60 @ 1 10 Tubular. Nos. 1 and 2 assorted sizes, 50 in box.....doz. 75c Nos. 1 and 2 assorted sizes, 10 in box.....doz. 1 40	WOOD. F. H. Bright77 1/2-20% R. H. Blued75-20% F. H. Jap'd70-20% F. H. Brass72 1/2-20% R. H. Brass70-20%	Wrought Steel. Painted, 16x24 "	STRAPS. Skateper doz. \$5c&1 20
ROPE. Cotton. 1/4, 5-16 in. Com. on reels, per lb. 80c 1/4, 5-16 in. Com. in coils, per lb. 80c	SCYTHES. Clipper, Grass.....per doz. \$12 50 Honest Dutchman... " 18 00	Ice. Key Clamp Rocker, Men's and Boys'—best steel runners, bright finish...\$9 91 Same—nickel plated finish 1 12 Key Clamp Hockey, Men's and Boys'—polished cast steel runners 1 24 Children's Extension Hob... 55 Half-key Clamp Rocker— Women's and Girls'.... 1 15 Half-key Clamp Hockey— Women's and Girls'.... 1 51 Racers, aluminum finish, including shoes 9 00 Hockey, aluminum 9 00 Both same prices for men's and women's.	SKATES. Per pair Roller. Ball Bearing—Boys' 1 85 Ball Bearing—Girls' 1 95
Gial. 1st Quality, base 12 1/4c to 13 1/4c No. 2.....11c to 11 1/2c	ROPE. Pure Manila. 1st quality, base, per lb.17 1/2c to 18 1/4c Hardware Grade, per lb. 11 1/2c	Cast Iron. Painted, 16x24Net Enameled, White, 16x24... "	

STRETCHERS.

Carpet.	
Bullard's	per doz. \$3 90
Excelsior	" 5 25
Malleable Iron....	" 70
Perfection	" 6 30
King	" 4 50

Wire.

O. S. Elwood, No. 1 per doz. Nets	
O. S. Elwood, No. 2	"

SWIVELS.

Malleable Iron	per lb. \$0 10
Wrought Steel	per gro. 4 50

TACKS.

Bill Posters' 6-oz., 25-lb. boxes.	
per lb.	15c
Upholsters' 6-oz., 25-lb. boxes, per lb.	15½c

TAPES, MEASURING.

Asses' Skin	List & 40%
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THERMOMETERS.

Tin Case.....per doz. 80c & 1 25	
Wood Back....	\$2 00 & 12 00
Glass.....	" 12 00

TIES.

Bala.	
Single Loop, carload lots	75 & 7%
Single Loop, less than ear lots	70 & 15%

TOOLS, SAW.

Disston's Universal.....	10%
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TRAPS.

Game with Chalmers.	Per doz.
Victor No. 1.....	\$2 01
Onelda Jump. No. 1.....	2 75
Newhouse No. 1.....	5 62

Mouse and Rat.	List per gross.
Sure Catch Mouse Traps..	\$ 70
Vim Mouse Traps.....	3 70
Short Stop Mouse Traps..	3 20
Wood Choker Mouse Traps, 4 hole.....	17 00
Sure Catch Rat Traps.....	16 00
Vim Rat Traps.....	16 00
Short Stop Rat Trap.....	15 00
Dead Easy Rat Traps.....	17 00
Star Rat Traps.....	50 00
Erie	54 00
Packed in One Bushel Band Stave Baskets.	

Sure Catch Mouse Traps (\$50 Traps)	\$ 30
Short Stop Mouse Traps (\$50 Traps)	8 00
Sure Catch Rat Traps (54 Traps)	6 00
Short Stop Rat Traps (54 Traps)	5 60

Assorted Mouse and Rat Traps.	
List per bushel.	
Sure Catch (216 Mouse Traps and 26 Rat Traps).....	\$8 50
Short Stop (216 Mouse Traps and 26 Rat Traps)	7 50

TROWELS.

Cement.	
Atkins No. 6.....	19 50
" No. 9.....	25 50
Disston's	30%

TRUCKS.

Sag	each \$2 75
Warehouse or store, No. 1, each	\$24 50
No. 2, "	22 50

TUBS, WASH.

Standard, Wood.	Ex.
No. 3	2 1 large
Per doz. \$9 50	11 25 12 75 15 50

Galvanized.	
No. 1	2 3
Per doz.	13 75 15 95 18 60

TWINE.

White Cotton.	
Eureka, 4-ply.....per lb. 30c	
Jute.	
3-ply and 6-ply Bale Lots.....	22½c

VALLEY.

Formed Valley Galvanized Steel	60-5%
Milcor	Net

VISES.

No. 700, Hand.	
Inches 4½	5 5½
Dox.	\$11 15 13 00 14 85
No. 701, In. 4	5 6
Dox.	\$11 15 13 00 16 70
No. 1, Genuine Wentworth, Noiseless Saw....per doz.	15 00
No. 2, Genuine Wentworth, Noiseless Saw....per doz.	22 50
No. 3, Genuine Wentworth, Noiseless Saw....per doz.	20 00
No. 500, All Steel Folding Saw	per doz. 16 00

WASHERS.

Standard O. G. cast Iron, per lb.	3½c
Wrought steel in 5-lb. boxes, per lb.:	
In. 3/16 ¼ 5/16 ¾	15c 14c 12c 11c 10c
¾ 1	9½c 9c 8c 8c

WEDGES.

Ax.	per doz. Nets
Galling	per lb. Nets
Saw	per lb. 8½

WEANERS.

Fuller's, per doz. \$2 00 to \$ 2 50	
Tyler's Safety, per doz.	1 85 to 2 40
Carroll's, per doz. 3 00 to 3 75	
Hoosier, per doz. 3 50 to 4 60	
Shaw Perfected.. 3 00 to 3 75	

WEIGHTS.

Hitching	per lb. Nets
Sash—f. o. b. Chicago.	
Ton lots, per ton.....	\$40 00
Smaller lots, per ton....	42 50

WHEEL BARROWS.

Common Wood Tray.....	\$2 00
Steel Tray	4 50
Angle leg, garden.....	5 75

WHEELS.

Carborundum	50%
Emery	60%
Well, Ins.....	3 10 12
Per doz.....	\$5 50 7 25 8 50
12-in. heavy hoisting, per doz.....	\$25 00

WIRE.

Plain annealed wire, No. 8 per 100 lbs.....	\$3 45
Galvanized barb wire, per 100 lbs.	4 15
Wire cloth—black painted, 12-mesh, per 100 sq. ft....	2 50
Cattle Wire—galvanized catch weight spool, per 100 lbs.	4 15
Galvanized Hog wire, 80 rod spool, per spool.....	3 85
Galvanized plain wire, No. 8, per 100 lbs.	4 00

WOOD FACES.

50% off list.

WRENCHES.

Coss Steel Handle, 6-inch.....	30%
" " " 8- "	30%
" " " 10- "	30%
" " " 12- "	30%
Coss Knife-Handle, 6- "	30%
" " " 8- "	30%
" " " 10- "	30%
" " " 12- "	30%
Coss All Patterns.....	30%
Bemis & Call's:	
Adjustable S. 10% Adjustable S Pipe, 10%; Briggs' pattern	30%
Combination Bright	25%
Steel Handle Nut	30%
Combination Black	25 & 5%
Merrick Pattern	30%

Knife Handle Pattern.	
No. 43, Screw Wrench, List plus	30%
No. 60, Steel Handle.....	30%

WRINGERS.

No. 790, Guarantee, per doz. \$60 00	
No. 770, Bicycle	55 00
No. 670, Domestic	51 00
No. 110, Brighton	45 00
No. 750, Guarantee..	60 00
No. 740, Bicycle	55 00
No. 22, Pioneer	42 50
No. 2, Superb	30 00

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